Welcome home, Amazon.

In Northern Virginia, Amazon will find an exemplar of a vibrant, diverse, inclusive community embedded in a region where people are making a difference in the world across the fields of technology, public service, healthcare, and everything else imaginable. Here, innovation isn't just constrained to technology – it is about finding solutions to tackle the biggest problems in the world. We do this by blending technology, policy, and good old-fashioned determination to develop and scale global solutions.

By choosing our region, Amazon will become part of the densest concentration of people who want to leave a mark in the world. As a company with big ambitions and an even bigger smile, Amazon will fit right in.

North America's top producer of tech talent – plus new investments in the tech talent pipeline to match Amazon's scale and innovation ambition

We are the country's most educated region (~49% of those 25 and older have at least a bachelor's degree), and we produce more computer science graduates than any other metropolitan area in the U.S. We also have a ready base of talent as the country's third-largest pool of software developers and fourth-largest pool of management and legal professionals.

With the densest concentration of tech talent in the U.S. and the second highest number of tech workers, tech is embedded in the region's DNA. The region's strong depth of talent cuts across all tech fields, including the most in-demand specialized skills like machine learning, UX/UI design, and hardware engineering. Not only are we attracting skilled talent in these fields, we are attracting leaders who are drawn here because they want to make a difference in the world. Combining this ability to attract talent with the quality and quantity of talent graduating from one of the best public university systems in the country, the Greater D.C. region has the talent Amazon needs, now and in the future.

The greater D.C. area has more annual computer science graduates than all other metropolitan areas

New computer science graduates, annually (Bachelor's degree and above)

Number of new computer science graduates, 2015

New York 6,033
Chicago 3,680
Pittsburgh 1,910
Boston 2,891
Denver 1,025
Los Angeles
Greater D.C. 6,258
Atlanta 1,947
Rest of Virginia 2,077
Dallas 2,044
Austin
Miami

Source: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2015

Furthermore, as tech changes the way communities, people, and even computers interact, being co-located with the nation's policymakers will provide differentiated access to both policy and thought leaders as well as branches of science doing cutting edge work leveraging these specialized skills. Take machine learning for an example. Machine learning specialists are helping innovative firms like Capital One apply these skills to build a next-generation financial firm, research institutions like the National Institutes of Health develop the next generation of personalized medicines, and tech startups like Deep Learning Analytics develop groundbreaking radar technologies to help keep the world safer. Across fields and sectors, Greater D.C.'s tech talent, especially those in specialized fields, are literally changing the world.
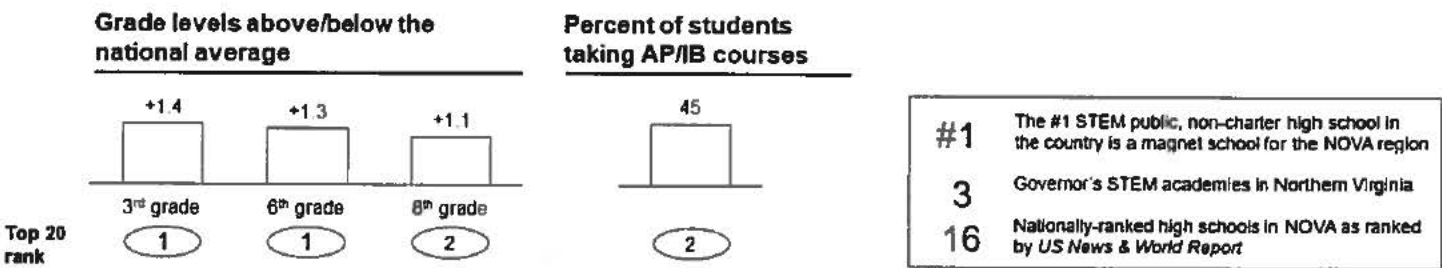
What's more, Greater D.C.'s tech pool reflects our community, with 29% non-native workers, 29% women, and 17% African-American. Tech in the rest of America has struggled to reflect the diversity of its community... but our region shows that the industry does not have to.

What's more, Greater D.C.'s tech pool reflects our community, with 29% non-native workers, 29% women, and 17% African-American. Tech in the rest of America has struggled to reflect the diversity of its community... but our region shows that the industry does not have to.

Non-Native	Women	African-Americans
29%	29%	17%
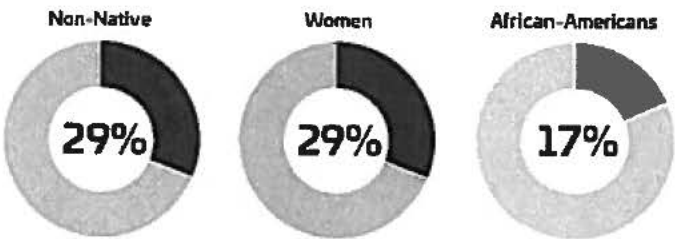
Prepare for the future: K-12 excellence

We know Amazon is looking well beyond the next five or ten years to identify future sources of talent. NOVA's school systems are among the best in the country, offering every student – no matter their economic situation, home language, or ability – the support and opportunities to explore, learn, and even to start specializing in STEM fields like life sciences, robotics, and programming. Heck, we already have 6th-graders securing a patent! Starting with strong foundations built upon STEM principles, our students take every opportunity to challenge themselves – in fact, NOVA has more students enroll in AP/IB courses than any other Top 20 contender, with the exception of Montgomery County.

Grade levels above/below the national average

	3rd grade	6th grade	8th grade
	+1.4	+1.3	+1.1
Top 20 rank	1	1	2

Percent of students taking AP/IB courses

45
2

#1	The #1 STEM public, non-charter high school in the country is a magnet school for the NOVA region
3	Governor's STEM academies in Northern Virginia
16	Nationally-ranked high schools in NOVA as ranked by US News & World Report

Source: Stanford Education Data Archive ; U.S. Department of Education, Civil Rights Division, U.S. News & World Report

With the #1 STEM public, non-charter high school in the country – Thomas Jefferson High School for Science and Technology – and multiple Governor's STEM Academies, the over 300,000 students in the region have the academic foundation, the aptitude, and the desire to lead the likes of Amazon in the future. A partnership with Amazon and its employees, investing, mentoring, and supporting these students, can easily turn their dreams into reality.

The K-12 pipeline is already among the best in the country, and our high-quality universities have been rapidly expanding over the last few years to meet the needs of the tech industry. Now armed with the catalytic investments contained in this partnership proposal, our school systems and higher education institutions will be able to accelerate their growth plans to meet Amazon's needs.
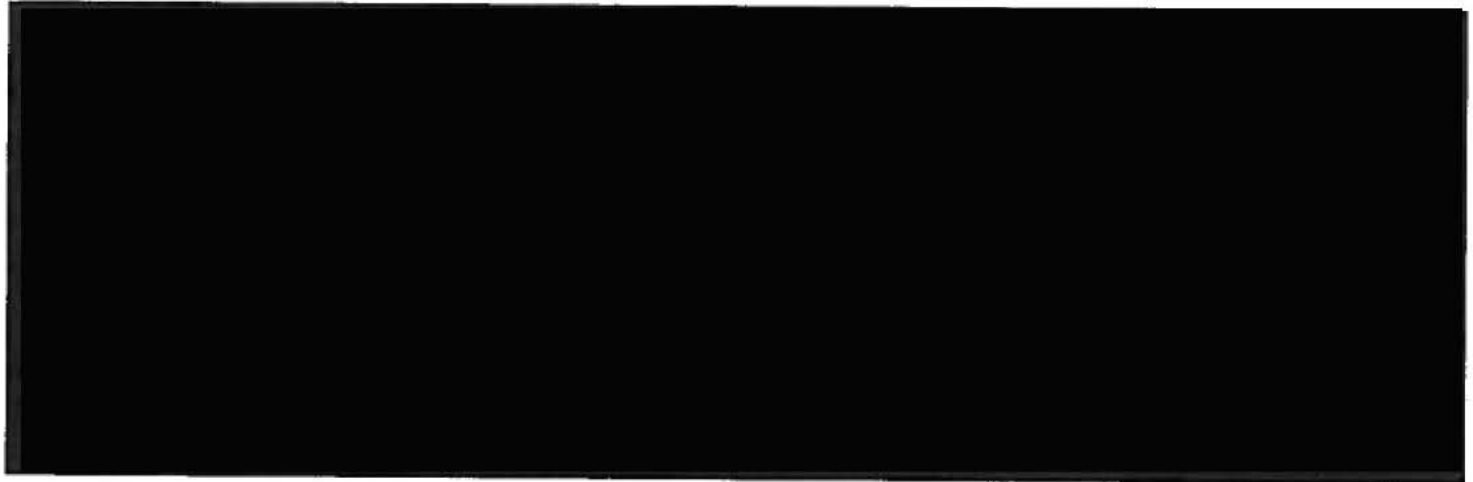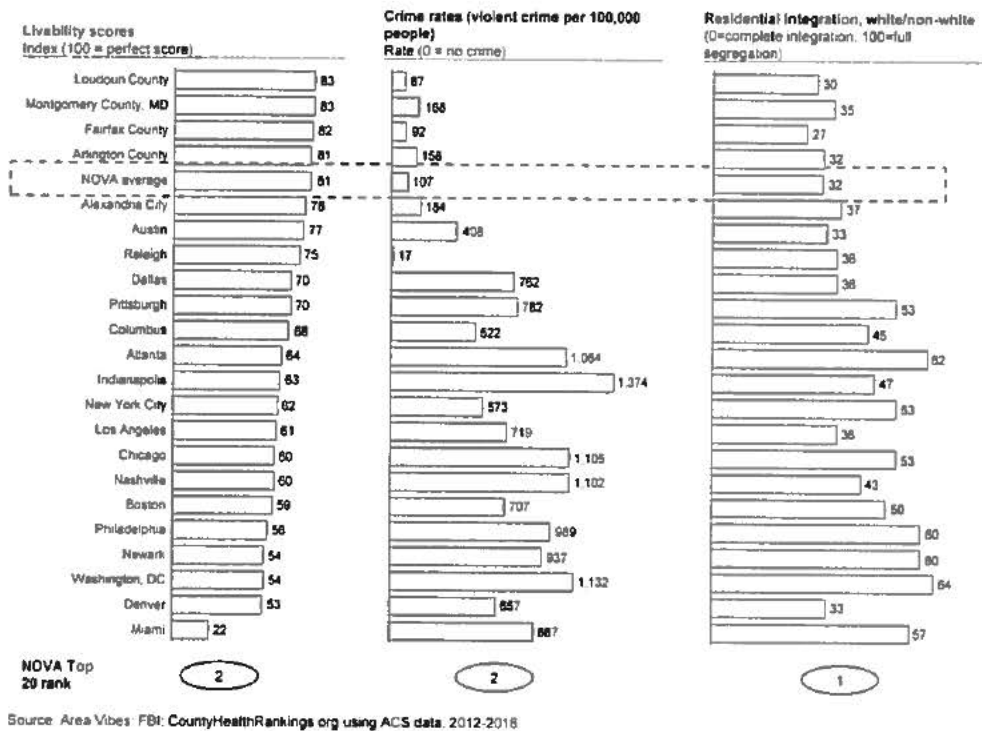
A global and inclusive region...on a human scale

The D.C. region is a global power center, the capital of global democracy, and one of the hottest destinations for international migration. NOVA offers unrivaled access to this metro while maintaining options for everyone, with access to some of the country's most interesting cultural and historical sites, sports teams in all major leagues, and a dynamic food and wine scene. We are home to a broad range of outdoor activities, from kayaking on the Potomac to hiking in the nearby Shenandoah National Park, all as part of our mild four-season climate. We are also a set of tight-knit communities, offering a diversity of housing options, some of the country's top-ranked public schools, and one of the country's top-rated public transit systems.

A beacon of diversity and inclusion

Diversity is the lifeblood of our region and at the core of what makes us a special global community – Greater D.C. is among the most diverse in the country, with non-whites making up 45% of the population and 28% of residents foreign-born. Here, diversity extends to the tech sector as well, where Greater D.C. has one of the most diverse tech talent markets among its Top 20 peers (the region is the only MSA to be in the top five for both percent non-white tech talent and percent women in tech). NOVA, more specifically, is just as diverse, even beyond just race and gender – approximately one in four of our residents was born outside the United States; the children in our schools speak ~100 native languages; and our communities are ranked among the most LGBTQ-friendly nationwide.

In short, **NOVA is an exemplar of a vibrant, diverse, inclusive community**. We rank at the top or near the top for livability, safety, and, proudly, neighborhood diversity. In NOVA, our diverse residents don't just cross paths in a park – we live together, work together, and look after one another.
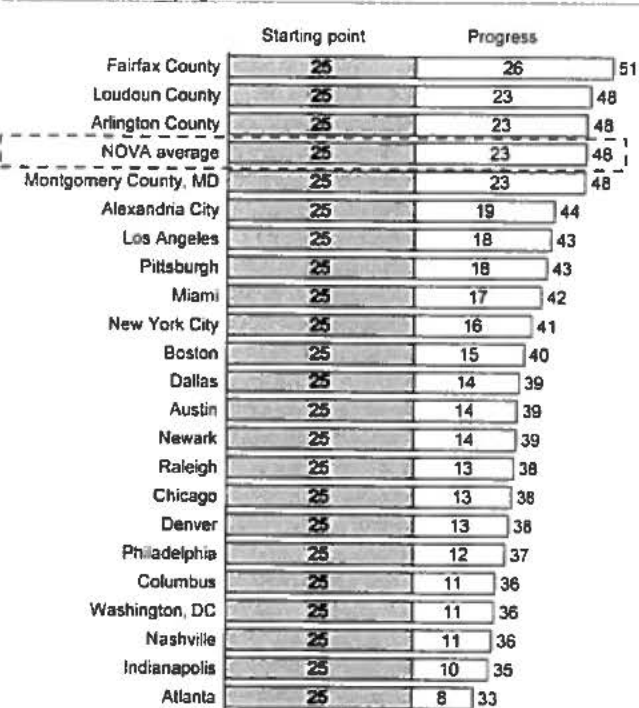

Livability scores
Index (100 = perfect score)

Crime rates (violent crime per 100,000 people)
Rate (0 = no crime)

Residential integration, white/non-white
(0=complete integration, 100=full segregation)

	Livability	Crime rate	Residential integration
Loudoun County	83	87	30
Montgomery County, MD	83	168	35
Fairfax County	82	92	27
Arlington County	81	158	32
NOVA average	81	107	32
Alexandria City	78	154	37
Austin	77	408	33
Raleigh	75	17	36
Dallas	70	752	36
Pittsburgh	70	782	53
Columbus	68	622	45
Atlanta	64	1,064	62
Indianapolis	63	1,374	47
New York City	62	573	53
Los Angeles	61	719	36
Chicago	60	1,105	53
Nashville	60	1,102	43
Boston	59	707	50
Philadelphia	56	989	60
Newark	54	837	60
Washington, DC	54	1,132	64
Denver	53	657	33
Miami	22	667	57

NOVA Top 20 rank: (2) (2) (1)

Source: Area Vibes; FBI; CountyHealthRankings.org using ACS data, 2012-2016

Just as important, **NOVA defines opportunity**.

For our families and children starting out with social and/or economic challenges, NOVA's communities offer some of the best chances to improve their economic status in the country. In NOVA, children born at the 25th-percentile of income are likely to end up at the 48th-percentile by age 30 – the highest upward mobility among our Top 20 peers. These numbers are the result of a decades-long commitment to ensuring every person and family can access the educational and employment opportunities for which the region is so well known.

Amazon wants a home that values people who are different and who think differently but are committed to similar values of equality and opportunity. Amazon will find this home in Northern Virginia. We are excited that Amazon shares the same commitments to making the community and the world around us a better place.

Estimated income percentile at age 30 for a child born into the 25th percentile
Measure of economic progress

	Starting point	Progress	
Fairfax County	25	26	51
Loudoun County	25	23	48
Arlington County	25	23	48
NOVA average	25	23	48
Montgomery County, MD	25	23	48
Alexandria City	25	19	44
Los Angeles	25	18	43
Pittsburgh	25	18	43
Miami	25	17	42
New York City	25	16	41
Boston	25	15	40
Dallas	25	14	39
Austin	25	14	39
Newark	25	14	39
Raleigh	25	13	38
Chicago	25	13	38
Denver	25	13	38
Philadelphia	25	12	37
Columbus	25	11	36
Washington, DC	25	11	36
Nashville	25	11	36
Indianapolis	25	10	35
Atlanta	25	8	33

Source: Raj Chetty, The Equality of Opportunity Project

America's only metro leading public and private-sector innovation

Innovation is our lifeblood. Our legacy of transformative technologies transcends sectors, from the Defense Advanced Research Projects Agency's (DARPA) role in inventing the internet and voice-recognition systems; to our public/private collaboration to create more than 70 miles of automated corridors for connected and autonomous vehicle testing; to our history as the foundation of the telecom revolution and our current depth of technology companies – our region sits uniquely at the nexus of public and private innovation. As the home to the federal government, we provide access to the largest customer in the world and the regulator overseeing Amazon's businesses of today and tomorrow.

A stable and competitive partner with a legacy of exceptional governance.

Virginia is consistently rated among the best states to do business in leading publications. Of all of the Fortune 500 companies based in the Greater D.C. area, two-thirds have chosen to locate in NOVA. According to a 2017 *U.S. News & World Report* ranking, Virginia is the No. 2 best state for governance, considering fiscal stability, budget transparency, and state integrity.

#2 US News & World Report Best State for Governance

#5 Forbes Best State for Business

#6 Tax Foundation Corporate Tax Rank

A region uniquely well positioned with the capacity to support the rapid growth of HQ2

The Greater D.C. region, and NOVA in particular, is uniquely positioned to absorb Amazon's rapid growth and more. With the diversity of options and plentiful supply (that's growing) of housing, a world-class transit system that continues expanding its reach throughout the region, and state and local governments that have shown a willingness to invest (and honor their commitments) in the future, NOVA is best-positioned to meet Amazon's needs.

Ample housing

We have enough current and planned housing to absorb Amazon's growth with moderate impact to rents. This housing expansion trend, especially for multifamily developments, extends back well over a decade and has led to some of the most moderate rent growth among the Top 20 cities. For instance, Washington, D.C.'s 7% rent growth rate from 2012-2017 makes it one of only three cities in Amazon's HQ2 Top 20 to experience single-digit rent growth in the last five years, and the broader region is poised to continue this trend.

Average rent, 1Q2017
USD

5-year rent growth
Percent

City	Average rent	5-year rent growth
*New York City	4,418	17%
Los Angeles	2,214	24%
Boston	2,154	20%
Newark	1,732	12%
Washington, DC	1,696	7%
Miami	1,664	22%
Chicago	1,512	21%
Denver	1,395	39%
Philadelphia	1,278	8%
Toronto	1,233	12%
Austin	1,201	23%
Nashville	1,123	33%
Atlanta	1,108	29%
Dallas	1,094	26%
Pittsburgh	1,075	-3%
Raleigh	1,039	20%
Columbus	874	19%
Indianapolis	820	15%
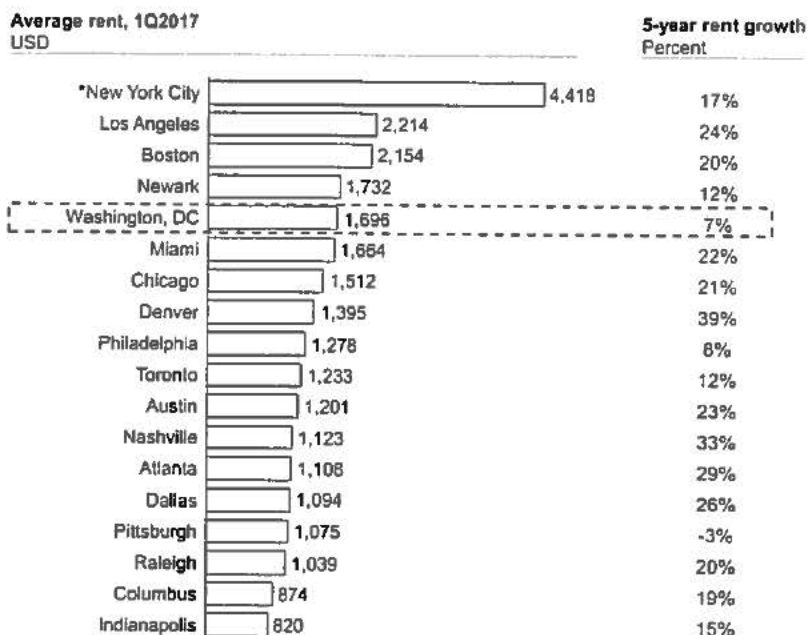
* Manhattan rent prices shown
Source: CBRE, Scoring Tech Talent, 2017

On a regional level, long-term annual rent growth rate for Class A apartments has been 3.9%, but the region has been expanding its housing stock at such a rapid pace in the last decade that this level has not been reached since 2010. With the diversity of housing options to meet homeowners' needs and preferences, and the space to accommodate a rapid influx of high earners looking to buy, the region is one of the very few in the country with the capacity, space, and track record of expansion that can legitimately meet Amazon's needs without destabilizing the local housing markets for existing residents.

Robust, multimode transportation system

We have the infrastructure to move Amazon's employees from their homes to their offices and to the rich cultural and recreational amenities throughout the region. With over a third of commuters commuting through means besides driving alone in the country (second only to New York City), the Greater D.C. region has been among the nation's most innovative in addressing transportation issues head-on. From the launch of the nation's first bikeshare program; to the 495 and I-95 High Occupancy Vehicles (HOV) / High Occupancy Toll (HOT) lanes designed to manage traffic in real-time; and, of course, to the third-largest public transit authority (by unlinked trips), the region continues to invest in innovative, sustainable transportation solutions.

Already home to some of the lowest transit commute times among major metros, the approximately $14.2 billion in planned and funded transportation investments over the next six years for NOVA will reduce congestion on our roads, encourage more people to use our world-class transit lines, and expand affordable and sustainable transportation options throughout the region.
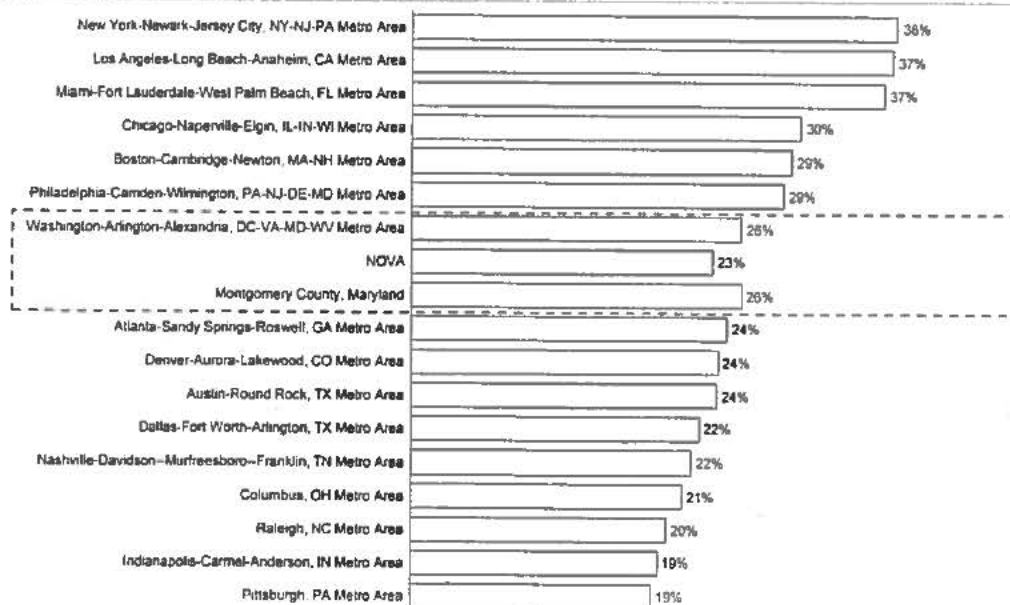
Average commute, public transit
Minutes

COL	PIT	AUS	RAL	INDY	PHL	NAS	BOS	DC	DEN	CHI	MIA	LA	NYC	DAL	ATL	NEW
40	42	42	44	44	45	45	47	49	50	50	51	51	52	52	54	61
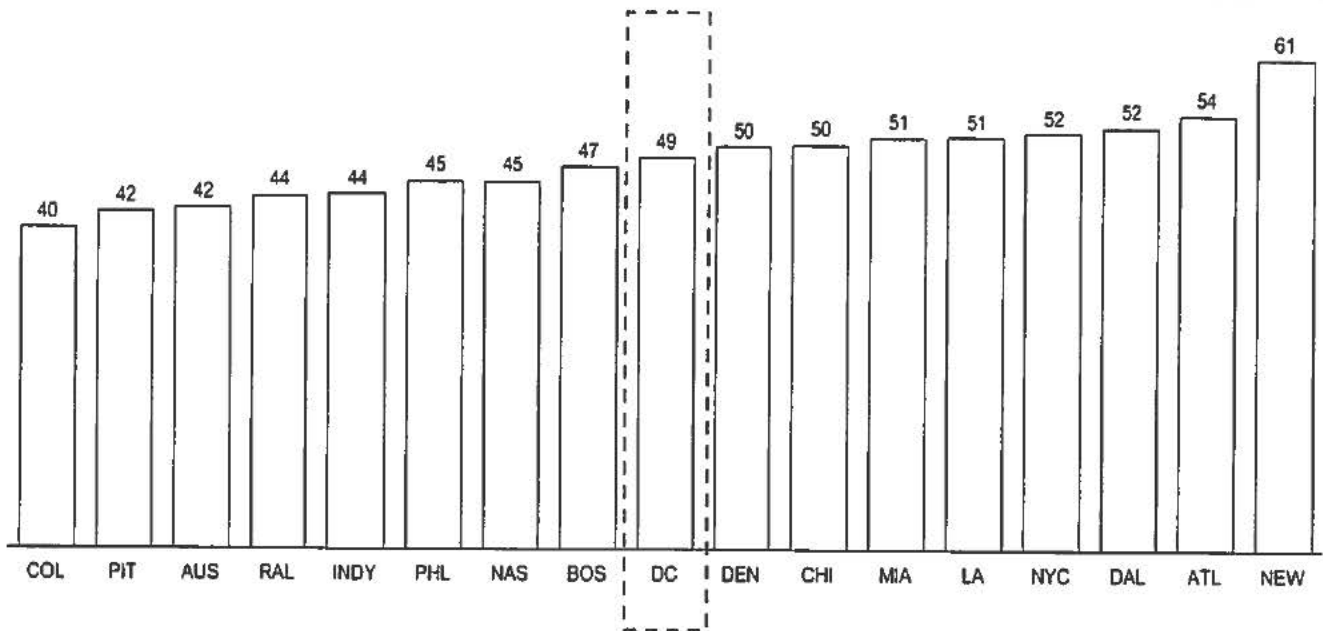
Source: Moody's Analytics

On challenges -- affordable housing

It is no secret that the Greater D.C. region, like other major metros, faces challenges with maintaining an adequate stock of affordable housing and managing congestion. Each of our four localities have long-term, detailed plans to ensure affordable housing availability that leverage a range of tools from unit or percentage set-asides on new development to innovative financing mechanisms and partnerships available to developers. While nowhere near the levels we desire, we do believe our lower share of housing-burdened households (households paying <30% of income on housing) suggests we are making progress.

Households paying over 30% of income to rent or mortgage
Percent

Metro Area	Percent
New York-Newark-Jersey City, NY-NJ-PA Metro Area	38%
Los Angeles-Long Beach-Anaheim, CA Metro Area	37%
Miami-Fort Lauderdale-West Palm Beach, FL Metro Area	37%
Chicago-Naperville-Elgin, IL-IN-WI Metro Area	30%
Boston-Cambridge-Newton, MA-NH Metro Area	29%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metro Area	29%
Washington-Arlington-Alexandria, DC-VA-MD-WV Metro Area	26%
NOVA	23%
Montgomery County, Maryland	26%
Atlanta-Sandy Springs-Roswell, GA Metro Area	24%
Denver-Aurora-Lakewood, CO Metro Area	24%
Austin-Round Rock, TX Metro Area	24%
Dallas-Fort Worth-Arlington, TX Metro Area	22%
Nashville-Davidson--Murfreesboro--Franklin, TN Metro Area	22%
Columbus, OH Metro Area	21%
Raleigh, NC Metro Area	20%
Indianapolis-Carmel-Anderson, IN Metro Area	19%
Pittsburgh, PA Metro Area	19%

Source: American Community Survey

Innovation Lives Here

A portfolio of trophy sites ready to match the scope, speed and scale of HQ2

Our proposed sites offer a diverse set of options that can meet a variety of preferences:

Alexandria	An urban site steps from historic Old Town Alexandria offering Amazon a blank canvas upon which to define and build the next generation of urban headquarter communities
Capital View	A set of skyscrapers perched atop the Potomac River offering some of the best views of Washington, D.C.'s most notable monuments, buildings, and natural landscape
Innovation Station	A 338-acre greenfield site cattycorner to Dulles Airport offers Amazon the chance to design and create a transit-connected, sustainable headquarters of the future
National Landing	15M square feet of development potential at the crossroads of Arlington and Alexandria's corporate district just a quick walk, bike, or Metro ride away from Reagan National Airport

A new model of economic development for the 21st century

Conclusion

There is a reason why two-thirds of all the Fortune 500 companies in the Greater D.C. region call NOVA home – we have the most favorable business climate, the talent base to meet the needs of business today and in the future, and the quality-of-life, livability, and diversity that people envision when they think of the ideal of "community."

We are not merely a place rich with talent and a strong quality of life for Amazon and its employees to call home; rather we offer a collaborative partnership to help Amazon grow as a company within and with our community. Together, we will think big, create a world-class model for public-private collaboration, and test and implement the technological solutions that will drive Amazon, our cities, and communities forward.

March 2, 2018

Jeffrey P. Bezos
Chief Executive Officer
Amazon
410 Terry Avenue North
Seattle, Washington 98109

Dear Mr. Bezos:

We are thrilled that our jurisdictions are being considered for Amazon's second headquarters and confident that your employees will feel right at home in Greater Washington. Our numerous urban and suburban hubs featuring multi-modal transportation choices, sustainable designs, cultural attractions, and diverse living options have been magnets for professionals and businesses alike, helping fuel our region's steady growth.

As we plan for the future, our governments are striving to shape communities where all residents—from service employees, to first responders, to high-tech workers—have access to a variety of affordable, workforce, and market-rate housing options. Based on current growth projections, we are anticipating the need for and jointly planning to add more than 350,000 new housing units to our current stock of more than 2 million units in the next 15 years.

Increasing our housing stock at all price points and in the right locations is a shared priority for each of us. It entails serious planning and innovative partnerships. We realize that faster growth—should Amazon select a site in Greater Washington—will require additional, coordinated action since we will all share many of the benefits and impacts in our interconnected region. For this reason, we are committed to working together to do even more and building on our promising local, state, and regional efforts already underway.

Our three jurisdictions' housing agencies are committed to partnering to promote more affordable housing regardless of which part of the region is selected by Amazon. Together and united, each agrees to provide housing ambassadors at Amazon's HQ2 to help your employees navigate the many housing options available in the region. In addition, the three jurisdictions will offer free homeownership education classes on Amazon's campus, work to standardize housing programs across the region, and use existing regional planning and housing delivery partners such as the Metropolitan Washington Council of Governments (COG) and the Housing Association for Non-Profit Developers (HAND) to assist in the development of new regional initiatives. The agencies will approach Fannie Mae and/or Freddie Mac regarding the development of a regional initiative, since both of these entities are headquartered in the region.

We will work in tandem to increase the production of affordable housing in the Greater Washington region through the use of federally-allocated Low Income Housing Tax Credits (LIHTC) and other state-funded initiatives. We will pledge additional funds for affordable housing beyond the amount currently going into the area to be used for various subsidies that could buy down interest rates, award grants, or address other pre-development expenses. Each jurisdiction will also dedicate more of its tax-exempt bond allocation for affordable housing.

To strengthen the collective impact of each of our efforts, our region has collaborated to target and implement effective ways to preserve housing. For example, a social impact bond known as "Our Region – Your Investment," managed by Enterprise Community Partners, has engaged both the private and public sectors helping ensure the continued economic growth of the area. We believe that similar models with development partners, supported by the business community, will complement our local and state efforts and further position the region to meet our shared housing needs.

It is essential for successful companies, like Amazon, to attract and retain a talented workforce. The vitality of our metropolitan region depends on this as well. Through innovative housing programs, we are committed to sustaining vibrant communities and a healthy economy for generations to come.

Respectfully,

Kenneth C. Holt
Secretary of Housing
and Community
Development
State of Maryland

Esther Lee
Secretary of Commerce
and Trade
Commonwealth of Virginia

Brian T. Kenner
Deputy Mayor for
Planning and
Economic Development
Washington, D.C.

March 1, 2018

Jeffrey P. Bezos
Chief Executive Officer
Amazon
410 Terry Avenue North
Seattle, Washington 98109

Dear Mr. Bezos:

The colleges and universities in the District of Columbia, Maryland and Virginia are delighted that Amazon has shortlisted sites in all three jurisdictions for its new headquarters, and we are united in supporting your continued growth and success in the region. Wherever Amazon chooses to locate within the Capital Region, you will find our institutions of higher education prepared and eager to be your partners in delivering a world-class talent pipeline and growing the region's vibrant innovation ecosystem.

Across the region, our institutions have a long history of creatively partnering with industry – including Amazon Web Services – and government to both support our region's workforce needs and advance cutting-edge research in diverse fields. Collectively, with more than 130 four-year and two-year institutions of higher learning, we enroll more than one million students and produce more than a quarter-of-a million graduates each year. And, with a large proportion of our total students choosing to work in the Capital Region after graduation, we help drive our status as the most well-educated region in the United States.

Today, the District of Columbia, Maryland and Virginia are helping lead the nation's digital transformation and we are proud to be playing our part. We develop more digital tech talent than any other region in the United States, with additional growth projected into the future. Over the last six years, the number of STEM degrees granted by our institutions has grown by 36 percent, with more than 14,000 associate degrees and certificates; 45,000 baccalaureate degrees; and nearly 24,000 graduate degrees awarded in 2016. Over the same period, the number of students graduating with degrees in computer science has increased by 80 percent.
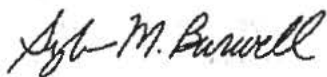
We are proud to offer multiple pathways to success for a diverse student population, including programs that create more affordable, seamless educational paths and summer bridge STEM programs. Approximately half of our region's post-secondary students are students of color, with the number of African American students pursuing a postsecondary degree approximately 10 percentage points higher than the national average. Our highly diverse student bodies also include more than 45,000 international students, helping position the Capital Region as a global gateway and a model of inclusive innovation, where we welcome new ideas and perspectives and foster diverse leadership. Together, our students, faculty and alumni are tackling critical global challenges both here in our region and around the world.

Our institutions contribute to one of the most robust and interconnected environments for innovation in the world – something often overlooked. For example, in 2016 the universities and affiliated research laboratories in the District of Columbia, Maryland and Virginia expended more than $5.3 billion in university-based research and development. This is the highest relative level of federally funded R&D in
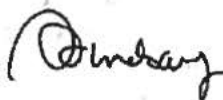
the United States and far ahead of other regions thought of as innovation hotbeds such as the Bay Area and Boston, which each expend approximately $3.2 billion. It is the breadth of high-quality research institutions which distinguishes the Capital Region, where eight of our 23 research universities are classified as "R1: Doctoral Universities – Highest Research Activity." No other region can match our scientific and research prowess, the foundation needed for tomorrow's commercial innovation.

Together, the breadth, depth and benefits of our institutions' capabilities cut across the jurisdictional boundaries in our region. We share a love of this region and passion for seeing it succeed. Irrespective of the site you select within the Capital Region, you have our collective commitment to making Amazon's expansion in the region a success. We all recognize that by selecting one of the three jurisdictions in the Capital Region for HQ2, we all win. We are eager to welcome Amazon as a partner in our shared work to grow and transform our dynamic regional economy.
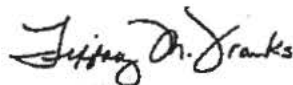
Sincerely,
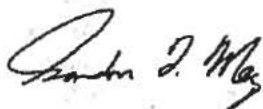
Sylvia M. Burwell
President
American University
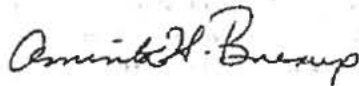
Dr. Dawn Lindsay
President
Anne Arundel Community College
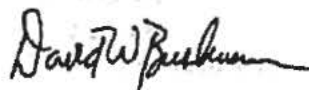
Tiffany M. Franks
President
Averett University
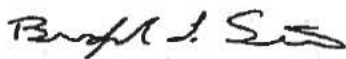
Gordon F. May, Ph.D.
President and CEO
Baltimore City Community
College

Aminta H. Breaux, Ph.D.
President
Bowie State University

David W. Bushman, Ph.D.
President
Bridgewater College

Bradford L. Sims, Ph.D.
President
Capitol Technology University

John Garvey
President
The Catholic University of America
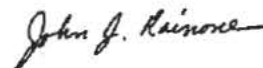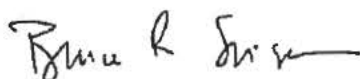

Dr. Mary Way Bolt
President
Cecil College

Sandra Kurtinitis, Ph.D.
President
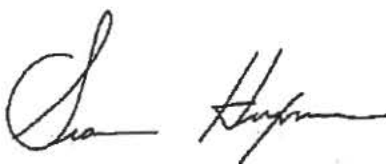Community College of Baltimore
County

Maria Thompson, Ph.D.
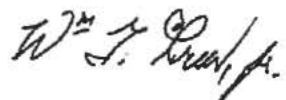President
Coppin State University

Dr. John J. Rainone
President
Dabney S. Lancaster
Community College

Bruce R. Scism
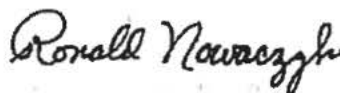President
Danville Community College

Susan Schultz Huxman, Ph.D.
President
Eastern Mennonite University

William T. Greer, Jr.
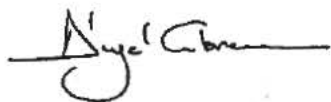Interim President
Eastern Shore Community
College

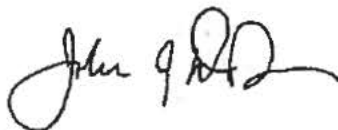Jake B. Schrum
President
Emory & Henry College

Ronald Nowaczyk, Ph.D.
President
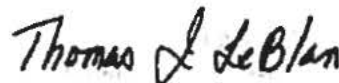Frostburg State University

Roberta J. Cordano
President
Gallaudet University

Ángel Cabrera
President
George Mason University

John J. DeGioia
President
Georgetown University

Thomas J. LeBlanc
President
The George Washington
University

3

Janet Gullickson, Ed.D.
President
Germanna Community College

José A. Bowen
President
Goucher College

C. David Warner, III
Interim President
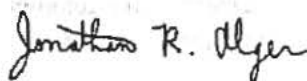Hagerstown Community
College

Andrea E. Chapdelaine, Ph.D.
President
Hood College

Kathleen Hetherington, Ed.D.
President
Howard Community College

Dr. Wayne A.I. Frederick,
M.D., MBA
President
Howard University

Jonathan R. Alger
President
James Madison University

Ronald J. Daniels
President
Johns Hopkins University

W. Taylor Reveley IV
President
Longwood University

Dr. Kim Blosser
President
Lord Fairfax Community College

Rev. Brian F. Linnane, S.J.
President
Loyola University Maryland

Samuel Hoi
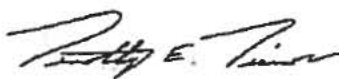President
Maryland Institute College
of Art

Dr. Matthew D. Shank, Ph.D.
President
Marymount University

Roger N. Casey
President
McDaniel College

DeRionne P. Pollard, Ph.D.
President
Montgomery College

4

Timothy E. Trainor, Ph.D.
President
Mount St. Mary's University

Kristen Westover, Ed.D.
President
Mountain Empire Community
College

Leanna B. Blevins, Ph.D.
Executive Director
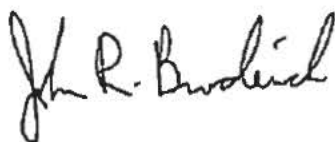New College Institute

Patricia B. Huber, Ph.D.
President
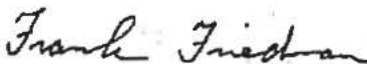New River Community College

Melvin T. Stith, Sr., Ph.D.
Interim President
Norfolk State University

Scott Ralls, Ph.D.
President
Northern Virginia
Community College

John R. Broderick
President
Old Dominion University
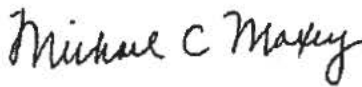
Frank Friedman
President
Piedmont Virginia Community
College

Dr. Charlene M. Dukes
President
Prince George's Community
College

Debbie L. Sydow, Ph.D.
President
Richard Bland College of William
& Mary

Michael C. Maxey
President
Roanoke College

Kay Dunkley, Ed.D.
Executive Director
Roanoke Higher Education
Center

Janet Dudley-Eshbach, Ph.D.
President
Salisbury University

Tracy Fitzsimmons, Ph.D.
President
Shenandoah University

Reed N. Wilcox
President
Southern Virginia University

Betty H. Adams, MBA, Ed.D.
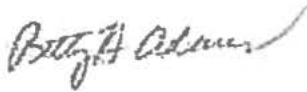Executive Director
Southern Virginia Higher
Education Center

Panayiotis Kanelos
President
St. John's College
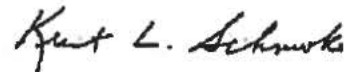
Elliot Hirshman
President
Stevenson University
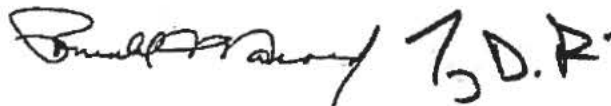
Kim Schatzel, Ph.D.
President
Towson University

Patricia McGuire
President
Trinity Washington University

Kurt L. Schmoke
President
University of Baltimore

Ronald Mason, Jr.
President
University of the District of
Columbia

Troy D. Paino, J.D., Ph.D.
President
University of Mary Washington

Jay A. Perman, M.D.
President
University of Maryland,
Baltimore
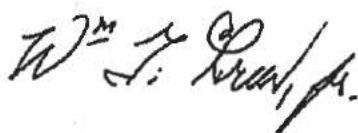
Freeman A. Hrabowski III
President
University of Maryland,
Baltimore County

Dr. Peter Goodwin
President
University of Maryland Center for
Environmental Science
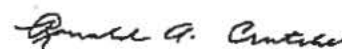
Wallace D. Loh
President
University of Maryland,
College Park
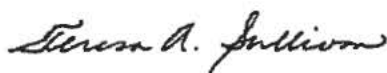
Juliette B. Bell, Ph.D.
President
University of Maryland Eastern
Shore

Mr. Javier Miyares
President
University of Maryland University
College
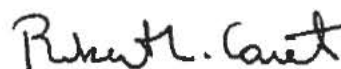
Ronald A. Crutcher
President
University of Richmond

6

Teresa A. Sullivan
President
University of Virginia
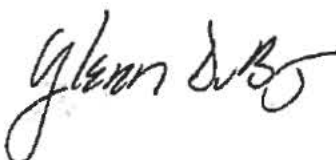
Donna P. Henry
Chancellor
The University of Virginia's College at
Wise
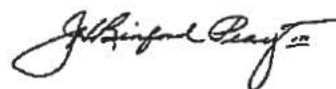
Robert L. Caret
Chancellor
University System of
Maryland

Michael Rao
President
Virginia Commonwealth
University

Glenn DuBois
Chancellor
Virginia Community College System

J.H. Binford Peay III,
General, U.S. Army (Retired)
Superintendent
Virginia Military Institute
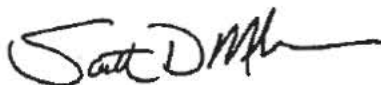
Dr. Makola M. Abdullah, Ph.D.
President
Virginia State University
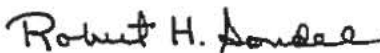
Timothy Sands
President
Virginia Tech

Hakim J. Lucas, Ph.D.
President & CEO
Virginia Union University

Scott D. Miller, Ph.D.
President
Virginia Wesleyan University

Dr. Robert H. Sandel
President
Virginia Western Community College

Weymouth Spence, Ed.D.,
R.T.
President
Washington Adventist
University

Kurt M. Landgraf
President
Washington College
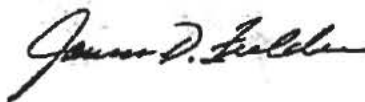
W. Taylor Reveley, III
President
William & Mary

GOVERNMENT LEADERS
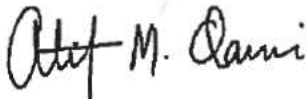
Hanseul Kang
State Superintendent of
Education
Government of the District of
Columbia

Dr. James D. Fielder
Secretary of Higher Education
Maryland Higher Education
Commission

Peter Blake
Director
State Council of Higher
Education for Virginia

Atif Qarni
Secretary of Education
Commonwealth of Virginia

Growth

By every measure, NOVA represents the best of "community," a place where people from all walks of life come together to live, learn, work, and play. NOVA does that and so much more.

We are a place rich with talent and quality of life that you and your employees will love calling home.
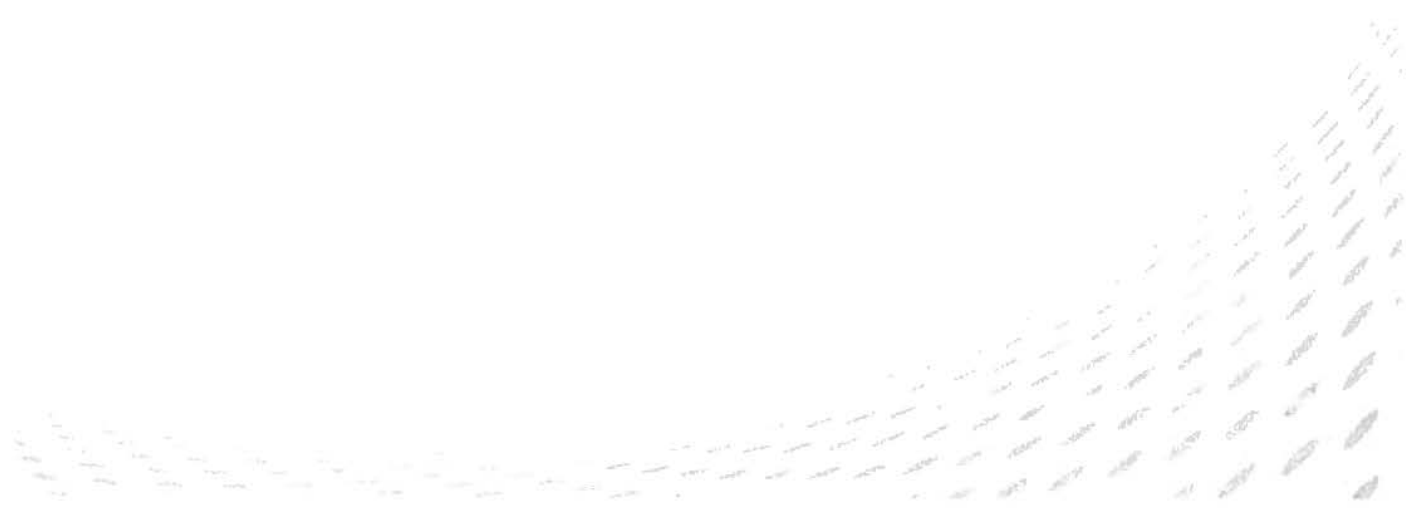
Health and fitness highlights
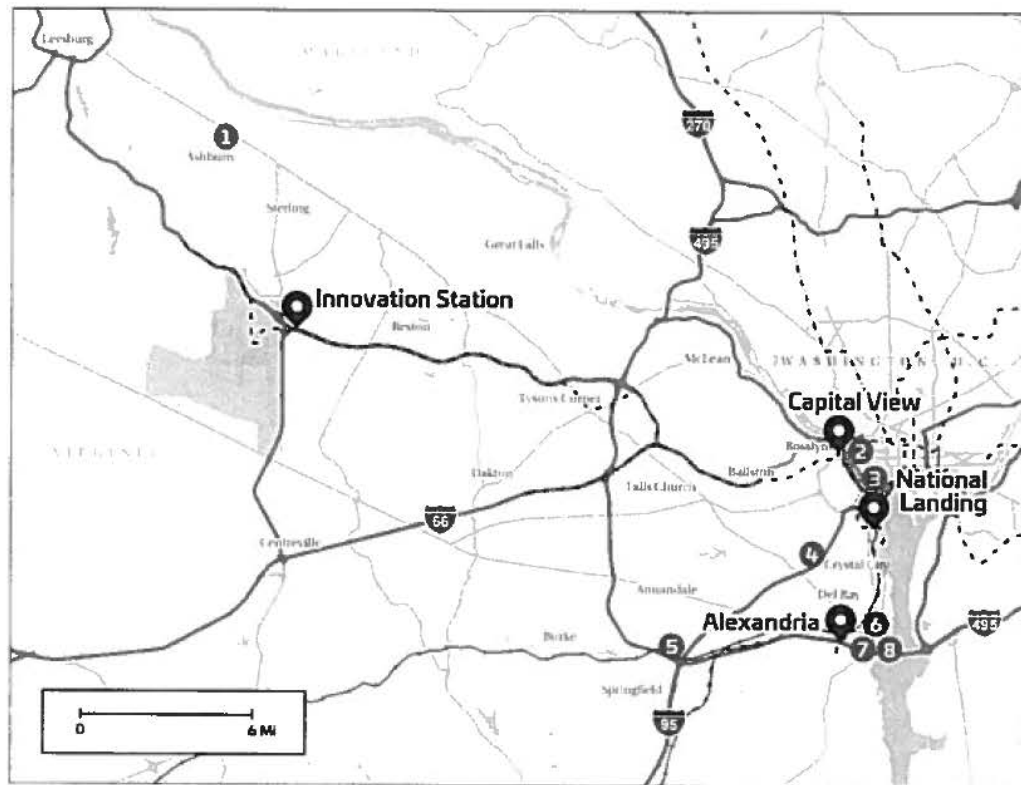
The Adaptive Recreation Program of Loudoun County Parks, Recreation and Community Services provides a variety of recreation and leisure opportunities for individuals of all abilities and skill levels. Serving four skill levels: participants with mild disabilities, moderate disabilities, severe disabilities and medically fragile. Activities range from healthy cooking and bowling, to bocce and track.

2 Four boathouses in Georgetown offer kayaks and canoes for rental. For boat owners, slips are available at the Marina at Georgetown for a waterfront dinner after a day out on the water.

3 With more than 30 acres of recreation, sports facilities, and green space located on the Potomac River overlooking Washington, D.C. Long Bridge Park has full-size, multi-sport lighted fields and a network of walkways in addition to a new state of the art aquatics, health, and fitness facility and park. Currently, plans and work are underway for a swimming and exercise venue set within a dynamic recreational complex that features four full-size athletic fields overlooking premier views of Washington, D.C.

4 Washington & Old Dominion (W&OD) Railroad Regional Park is often called the skinniest park in Virginia, the park is a paved linear trail between Arlington and western Loudoun County. Run, cycle or skate the 45-mile route along the former roadbed of the Washington & Old Dominion Railroad, which runs through urban and suburban Northern Virginia and into the countryside. Equestrians can ride the adjacent 32-mile gravel horse trail.

5 Coming in September 2018, St. James is a flagship 450,000sf sports, wellness, and active entertainment complex on 20 acres. The complex will offer an extraordinary experience for all ages and abilities with a combination of sports and wellness venues and programming, lifestyle amenities, and family-centered active entertainment. State-of-the-art facilities include fields, rinks, pools, and courts.

6 Limerick Field at AlexRenew is the first of its kind: an artificial-turf field on top of a wastewater treatment facility.

7 Mount Vernon Trail is an 18-mile trail that hugs the banks of the Potomac from Rosslyn to George Washington's Mount Vernon Estate. The trail offers wonderful views of the Potomac and D.C. monuments (it's THE best place for an unobstructed view of D.C.'s famous cherry blossoms).

8 Located directly on the Potomac River just south of Old Town Alexandria, Jones Point Park is home to popular playgrounds, multi-use fields, canoe launching docks, and a community garden. The park's lighthouse, built in 1855, is also the last remaining riverine lighthouse in Virginia.

Getting outside with your four-legged friend is always an adventure in NOVA.

The **Potomac Riverboat Company** offers a one-hour cruise of the Alexandria Seaport—and dogs ride free.

The Mount Vernon District **Ides of Bark** each spring includes games, prizes, food, events, and health assessments for furry friends.

Doggy Yappy Hour, every Tuesday in summer and fall, is an Old Town Alexandria institution.

The Dog **Days Bloom Festival** in April invites dogs to Great Country Farms for a romp with their furry friends while the orchards are in full bloom.

George Washington's **Mount Vernon Estate** opens its grounds to dogs on select Saturdays to share Washington's love for dogs.

During the holidays, the **Scottish Christmas Walk Parade** features packs of terriers in Scottish tartans marching to bagpipes.

In the fall, Fairfax County's pools open for dog paddling fun and the community hosts a **Howl-o-Ween** costume contest.

A Purrfect Pet Celebration, **Barktoberfest** in Loudoun County features demonstrations, pet-friendly vendors, live music, games, and the GlowDOGGlow Walk and Race.

Dog Parks in NoVa

18 Alexandria

8 Arlington

9 Fairfax

5 Loudoun
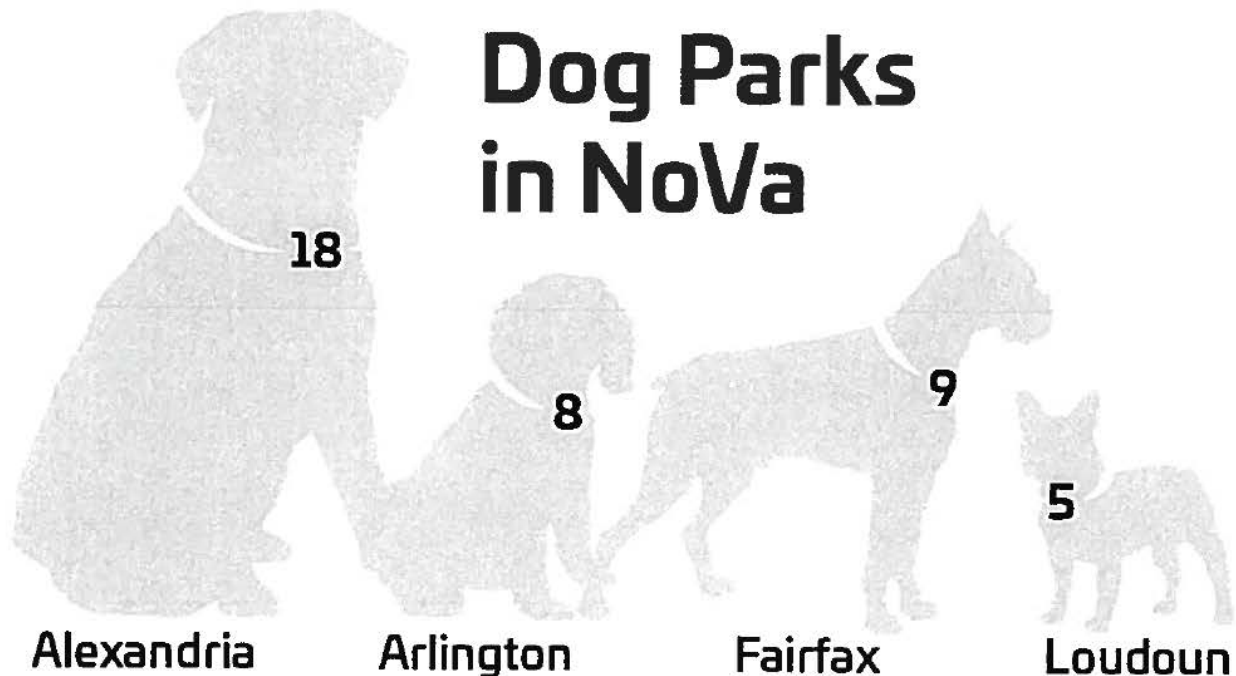
We value wellness.

Spas and wellness centers throughout NOVA cater to a multitude of whole health needs.

Azure Dream Day Spa -Arlington	The professional team at Azure Dream Day Spa is dedicated to each and every one of our clients. Technicians are highly-trained professionals who offer the best in skin care, massage, hair removal, body and cellulite treatments, and lash and brow treatments. Our equipment is new, state-of-the-art technology, delivering results that will satisfy the most discerning clients.
Dante Salon and Wellness Spa -Fairfax	Dante Salon and Wellness Spa is a full-service salon and day spa in the heart of downtown Fairfax. We strive to create a warm environment for our guests while serving their individual needs as a one-stop-shop salon and spa where our client can receive multiple services during their appointment, where convenience meets relaxation.
INOVA Medical Aesthetics -Ashburn	At MedSpa, health, wellness, and beauty are the number one priority. Many of the services offered are performed by board-certified and licensed providers you can trust who receive ongoing training and education so they are thoroughly familiar with our equipment's features and latest techniques.
Kimpton Lorien Hotel & Spa -Alexandria	At Kimpton Lorien Hotel & Spa, we roll with the seasons, celebrating skies of all hues and temperatures of all degrees. We know that attending to one's body is a full-time affair and something that needs to be penciled in all year long.
Malee Thai Massage & Bodywork -Fairfax	Treat your spirit, mind, and body to a complete and extraordinary reviving, de-stressing experience at Malee Thai Massage & Bodywork. Treatments are greatly influenced by Thai traditions and are the perfect complement to the therapeutic core of western wellness.
Origins Thai Spa -Arlington	The goal at Origins Thai Spa is to help you achieve good health. Using techniques and influences handed down for thousands of years throughout Southeast Asia, China, and India, we are not just providing a high-quality technical massage, but creating an atmosphere of genuine caring and concern for your well-being. Scrubs/wraps and waxing options ensure you relax and feel your best.
Salamander Resort & Spa -Middleburg	Indulge at the Salamander Resort & Spa with a blissfully restorative facial, deeply rejuvenating signature massage, or hot stone treatment. Tone and tune up at our state-of-the-art fitness facility that offers both indoor and outdoor workout spaces. Featuring integrative and regionalized treatments as well as holistic and results-driven therapies, we are committed to providing you with insight to a better, healthier lifestyle.

Growth | Community | Quality of Life

A1.b. As a proposed headquarters facility, the quality of life of the community is an important factor in our decision-making process. Quality of life impacts both our ability to recruit to the community and the satisfaction of employees working at the headquarters. Describe the quality of life in your community. Make sure to address each of the following: Cultural Activities, including Performing Arts, Fine Arts, Cultural Venues, and Festivals

NOVA Gets Its Art On.

Northern Virginia benefits from a broad array of world-class cultural offerings that celebrate the richness and diversity of its population. Traditional and non-traditional performances and spaces abound, showcasing a wide variety of local, national, and international talent. The thriving NOVA arts scene also features public art and maker spaces in addition to pop-up beer gardens, farmers markets, and unique special events year-round.

Niche gives Northern Virginia high marks for its quality of life, with "A" grades in its 2017 rankings.

	Alexandria	**A**
Nightlife	Arlington	**A**
	Fairfax	**B+**
	Loudoun	**A -**

NOVA's proximity to its suburbs, primarily Washington, D.C., also provides easy access to world-class artists, performances, cultural centers, and events.

Culture and arts abound throughout the region.
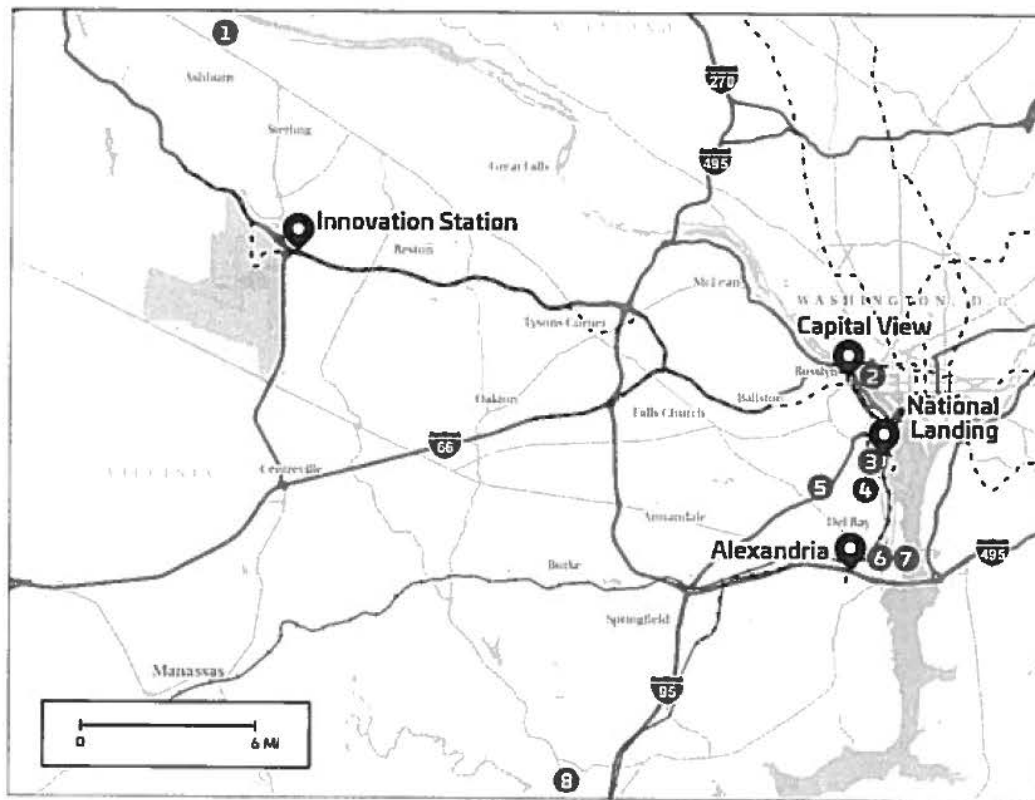
1 Four times a year, the Janelia Research Campus opens its doors to the greater community through a public lecture series called Dialogues of Discovery. In these evening lectures, researchers from Janelia and labs across the country share their work. Serious, insightful, funny, and often personal, the talks offer a window into how science works.

2 The John F. Kennedy Center for the Performing Arts is home to everything from the Washington National Opera to major Broadway shows, comedic acts, dance performances, and more. Of special note, there are free performances every single day at the Kennedy Center's Millennium Stage.

3 Art Underground transforms five blocks of Crystal City's interior retail space into a vibrant art and cultural destination with galleries, studios, interactive exhibits and activities, performance and classroom spaces, ArtJamz retail store, and a host of special events.

4 Birchmere Music Hall is a world-famous concert venue known for a nightly line-up of classic as well as up-and-coming jazz, country, R&B, folk and bluegrass artists in an intimate, relaxed setting. With a legendary reputation in the music industry, this Alexandria venue has hosted top acts throughout its fifty-year history.

5 A Tony Award-winning professional theatre producing world premiere and reinvented musicals and plays, Signature Theater produces Broadway caliber performances in an intimate space where audiences are never more than 45 feet from the action.

6 The Old Town Farmers' Market is the oldest farmers' market in the country held continuously at the same site. George Washington sent his produce from Mount Vernon to be sold at our Farmer's Market. Every Saturday, Market Square is busy with shoppers seeking out the market's fresh produce, flowers, and artisan goods.

7 Founded in 1974 in an old munitions plant, the Torpedo Factory Art Center is home to the nation's largest collection of working-artists' open studios under one roof. An Alexandria landmark for more than 40 years, it's the highlight of the Potomac Riverfront, and visitors can find wide variety of artistic media—including painting, ceramics, photography, jewelry, stained glass, fiber, printmaking, and sculpture.

8 The Workhouse Arts Center in Lorton is set on 55 acres of land on the campus of what used to be the historic D.C. Workhouse and Reformatory. Today, the Workhouse provides a home to 65 of the region's finest professional and emerging artists and is fast becoming a regionally and nationally recognized visual and performing arts mecca for all of those interested in the arts. Visit for standup comedy nights, live music, and Second Saturday Art Walks.

We celebrate it all here.

Dozens of festivals take place in NOVA each year, not to mention lots more in the surrounding communities. These gatherings of food, families, and fun offer something new just about every week of the year. Here are just a few.

February

George Washington Birthday Parade
The nation's largest George Washington Birthday parade marches a one-mile route through the streets of Old Town Alexandria.

Samedi Gras
Kick off Mardi Gras a few days early with your Cajun cousins at Breaux Vineyards!

Loudoun Grown Expo
Loudoun farms, artisans, and craft/beverage producers come together to showcase Loudoun's signature elements and present handmade and locally grown goods.

Lunar New Year Festival
Fairfax
The two-day event features traditional Chinese dragon dances, music and dance performances, martial arts demonstrations, children's crafts, and a special lantern festival.

March

Nowruz Festival
This grand outdoor festival draws more than 10,000 people every March to celebrate the Persian New Year.

St. Patrick's Day Parade
Federal, state, and local elected officials, the Irish Ambassador, military commanders, and other local celebrities participate in the Alexandria parade each year where local scouts, marques, and high school bands are represented.

Maker Faire NoVa
Maker Faire NoVa is a gathering of fascinating, curious people who enjoy making, experimenting, learning and who love showing what they can do.

Amazing Farm Fun Spring Festival
Fairfax
Activities include giant slide hills, huge jumping pillows, hayrides, animal feeding areas, pedal kart track, swinging bridge, and much more!

April

Shenandoah Apple Blossom Festival
A series of more than forty events includes band competitions, dances, parades, carnival, dinners, luncheons, wine festival, 10K Race, the Coronation of Queen Shenandoah, two large parades, and celebrities.

Flower & Garden Festival
Leesburg
The Flower & Garden Festival transforms Leesburg's Historic Downtown into a wonderland of gardens.

May

Spring Wine Festival & Sunset Tour
Celebrate the history of wine in Virginia with exclusive evening tours of the Mansion and rare appearances by George and Martha Washington, and a live jazz band.

Taste of Arlington
Arlington's incredible food scene is brought to the forefront in this fun, annual event.

Herndon Festival
The Herndon Festival, now in its 37th year, is one of the most popular outdoor festivals in Herndon, Virginia.

Rolling Thunder
Begun as a demonstration for those military who were abandoned after the Vietnam War, Rolling Thunder has grown into a beautiful symbol of patriotism.

June

Columbia Pike Blues Festival
Blues enthusiasts and those looking for a great time will love this annual blues festival.

Armed Forces Cycling Classic
Arlington
Competitive cyclists are invited to race in Arlington, with a variety of categories offered for licensed racers, including the nation's top Pro/Am men and women in Saturday's 21st Annual Clarendon Cup and Sunday's Crystal Cup.

July

Independence Day Celebration
Leesburg's 4th of July celebration begins with a hometown parade and continues with a "Celebration in the Park" at Ida Lee with food vendors and live music.

An American Celebration
Salute the first commander in chief during this annual Independence Day event!

Winestock
Arlington
WINESTOCK named one of the Best Wine Festivals in Virginia!

September

Herndon Labor Day Festival
Herndon
A fun outdoor street festival featuring unlimited samples from Virginia wineries, local craft breweries, food vendors, a craft show, sponsorship gallery, and musical performances.

Rosslyn Jazz Festival
Drawing more than 8,000 fans annually, this music festival features exciting performers that can't be missed.

Vintage Crystal Sip & Salsa
Get transported to Spain, Portugal and Argentina.

Clarendon Day
Arlington
Four stages of music, a chili cook-off, arts and crafts vendors from jewelry to photography and so much more!

Oktoberfest
Lovettsville
Settled by German immigrants in the 1700s, Lovettsville in Loudoun County celebrates its German ancestry and heritage with an annual Oktoberfest that includes traditional German music, dancing, food, wiener dog races, a pancake breakfast, children's activities, a beer garden, and over 100 vendors.

October

Fall Harvest Family Days
Celebrate the autumn season with 18th-century activities for the whole family at Mount Vernon. Take a horse-drawn wagon ride and play national games on the bowling green before heading to the Pioneer Farm to observe 18th-century demonstrations and greet General Washington.

Marine Corps Marathon
One of the largest marathons in the world. It's a good race for those who've never run a marathon before.

Capital City Brewing Company's Oktoberfest
Hosted by Capital City Brewing Company, welcome the fall with an event filled with an oompah-good time!

Army Ten-Miler
Held every October, the race benefits Soldier MWR programs. This event is also an opportunity for the Army to connect with the local community as over 600 soldiers volunteer to help during the race weekend.

November

National Veteran's Day Ceremony
Honor those who have sacrificed everything to protect the country we love. See the parade of colors as well as remarks from dignitaries. Arlington National Cemetery.

December

Scottish Christmas Walk Weekend & Parade
In 1749, the City of Alexandria was officially established by three Scottish merchants and named after the original founder, John Alexander, also of Scottish descent. The iconic Scottish Christmas Walk Parade features dozens of Scottish clans dressed in colorful tartans, will parade through the streets of Old Town, joined by pipe and drum bands from around the region, as well as reenactors and hounds.

One of NoVa's gems, **Wolf Trap National Park for the Performing Arts** hosts more than 100 performances annually in a spectacular natural setting. In addition to its performance calendar, the 117-acre park includes year-round recreation with hiking trails, picnic areas, and even sledding.

Announced performances in 2018 include:

- The Last Bandoleros
- The Second City
- Ana Popvic
- Barry Manilow
- Gay Men's Chorus
  of Washington D.C.
- The Washington Ballet
- Alison Krauss with
  David Crosby

- Reba McEntire
- Barenaked Ladies
- Queen Latifah
  & Common
- Lyle Lovett
  & His Large Band
- The Avett Brothers
- The Revivalists
- Jethro Tull
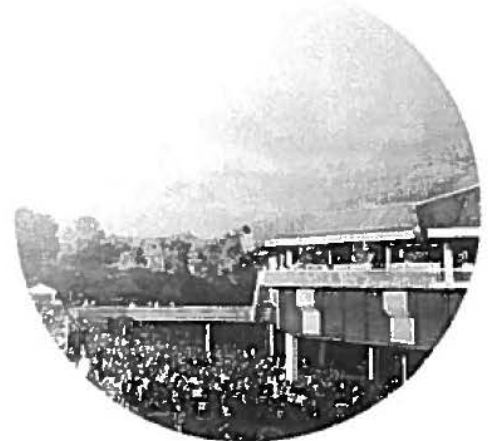
A1.c. As a proposed headquarters facility, the quality of life of the community is an important factor in our decision-making process. Quality of life impacts both our ability to recruit to the community and the satisfaction of employees working at the headquarters. Describe the quality of life in your community. Make sure to address each of the following: Crime

Virginia is one of the safest states in the country, ranking sixth nationally for its overall public safety record, according to U.S. News & World Report/McKinsey & Company rankings.

In terms of violent crime, Virginia has the second-lowest rate of its HQ2 peers, behind only Raleigh, NC, and among the lowest rates for hate crime, as well.

Crime statistics

Locality	Population	Violent Crime per 100,000	Violent Crime	Property Crime per 100,000	Property Crime	Hate Crimes per 100,000	Hate Crimes
Raleigh, Wake County**	1,046,791	17	173	160	1,678	3	28
Northern Virginia	1,909,966	107	509	1,215	5,802	2	10
Montgomery County**	1,043,863	168	1,749	1,443	15,066	1	8
Austin	956,911	408	3,903	3,506	33,545	2	19
Columbus	862,515	522	4,500	4,070	35,106	18	151
New York City	8,566,917	573	49,124	1,462	125,278	4	361
Denver	699,259	657	4,597	3,590	25,101	3	19
Boston	673,880	707	4,767	2,150	14,489	18	120
Los Angeles	4,007,905	719	28,817	2,474	99,151	6	227
Dallas	1,320,939	762	10,071	3,400	44,910	1	11
Pittsburgh	302,443	782	2,366	3,263	9,868	5	14
Miami	449,469	887	3,989	4,221	18,974	5	21
Newark	281,450	937	2,637	2,241	6,308	1	3
Philadelphia	1,570,826	989	15,534	3,141	49,334	1	18
Atlanta	472,579	1,084	5,121	5,249	24,804	1	5
Nashville	668,685	1,102	7,371	3,697	24,719	2	12
Chicago	2,725,153	1,105	30,126	3,191	86,960	2	51
Washington, D.C.	681,170	1,132	7,711	4,648	31,661	15	104
Indianapolis	866,351	1,374	11,907	4,795	41,540	3	28

Source: FBI, Uniform Crime Report 2016

*No data available

**Source for population estimates: U.S. Census 2016 Population estimates

A1.d(i). Current Housing Stock (availability, mix of rental versus owned, granular details on a few example neighborhoods if available, focus on [i] 3 bedroom, 2 bath, single-family homes and [ii] 1 and 2 bedroom apartments)

Northern Virginia offers a wide array of housing options that can meet every housing preference and price point for project employees.

- For employees looking for a **fast-paced urban lifestyle** replete with restaurants and bars, vibrant social scenes, and easy transit access, Northern Virginia can deliver on these expectations and more.

- For employees seeking more space in more **traditional single-family home** communities, Northern Virginia has dozens of neighborhoods at every price point.

- And for those employees **in between the two**, looking for more spacious housing options in the heart of the fast-paced urban environment, Northern Virginia can deliver.

Northern Virginia's housing options (and neighborhoods) are as diverse as the population that calls the region home, allowing residents to find an option that meets their preference without comprise.

The NOVA region contains over 700,000 units, and over one million units when including D.C.

The specific housing stock varies based on the locality, and even the neighborhood; overall, 42% of the units are traditional single-family detached homes, 29% attached single-family homes, and 28% multifamily units, with the remainder falling into a miscellaneous category.

Housing stock
Thousands of units

Locality	Traditional, detached homes	Attached homes (e.g., townhomes)	Apartments and Condos	Other	Total
Alexandria	9,912	25,216	41,445	0	76,573
Arlington	30,605	23,202	59,052	111	112,970
Fairfax	196,432	120,778	93,971	3,139	414,320
Loudoun	71,361	43,375	14,369	836	129,941
NOVA total	**308,310**	**212,571**	**208,837**	**4,086**	**733,804**

Source: American Community Survey, 2016 1-year estimates

Vacancy rates for owner-occupied units, which account for nearly two-thirds of the units, are quite low, averaging ~0.7% for the NOVA region. Vacancy rates for rental units are slightly higher, averaging 4.3% across the NOVA region.

Housing stock

Locality	Owner-occupied	Owned units, vacancy rate	Renter-occupied	Rental units, vacancy rate
Alexandria	40%	0.3%	60%	4.2%
Arlington	45%	0.6%	55%	5.6%
Fairfax	67%	0.7%	33%	3.6%
Loudoun	79%	0.8%	21%	5.2%
NOVA wtd. average	**63%**	**0.7%**	**37%**	**4.3%**

Source: American Community Survey, 2016 1-year estimates

Urban, suburban, rural... there are options

Regardless of the specific site selected in the Northern Virginia region, project employees will have ample housing options from which to choose.
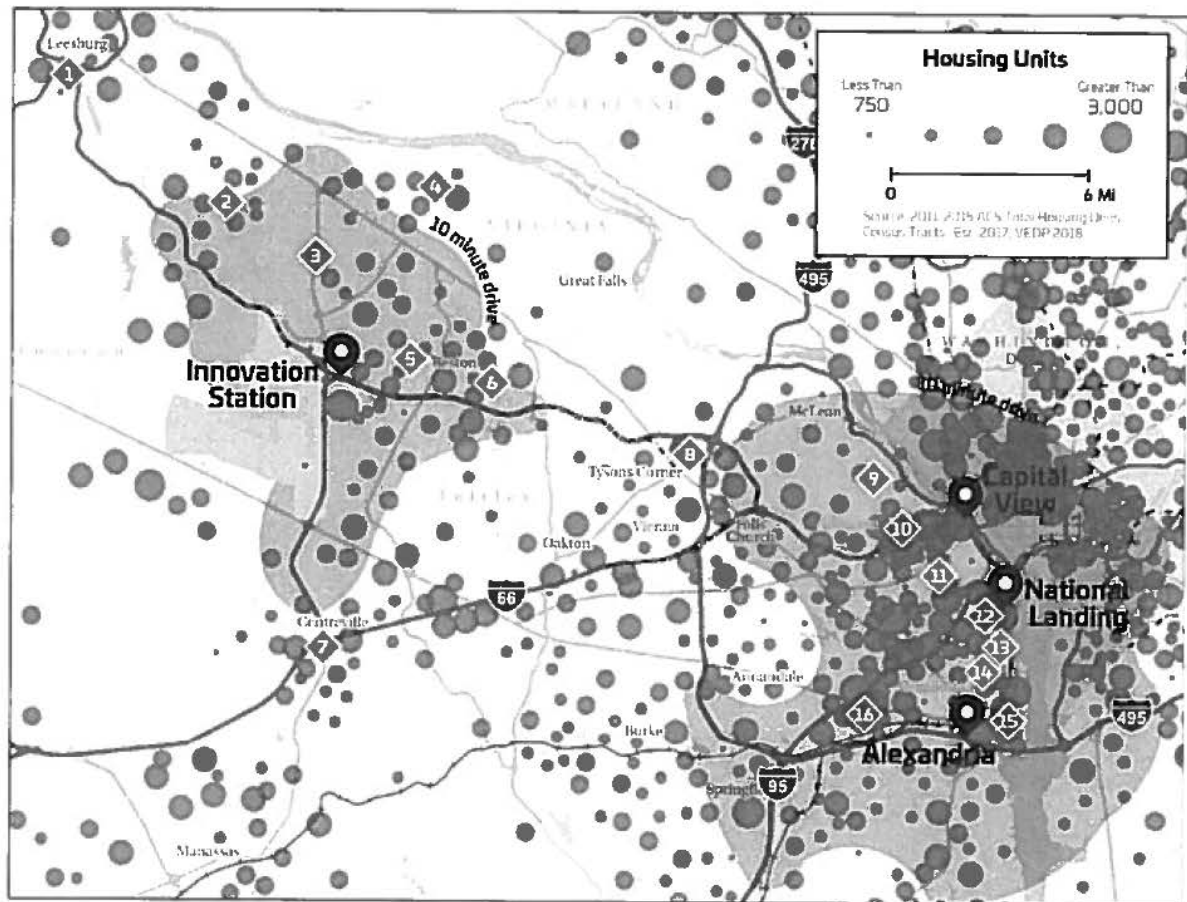
Loudoun
1. Leesburg
2. Ashburn
3. Sterling
4. Potomac Falls/Cascades

Fairfax
5. Herndon
6. Reston
7. Centreville
8. Tysons Corner

Arlington
9. North Arlington
10. Rosslyn-Ballston Corridor
11. Columbia Pike
12. Crystal City/Pentagon City

Alexandria
13. Del Ray
14. Potomac Yard
15. Old Town
16. West End

In Alexandria, Old (Town) meets new.

The housing in Alexandria is diverse in age, style, and options. While regionally-celebrated neighborhoods such as Old Town and Del Ray offer charming older rowhouses and bungalows, the City's dynamic, culturally vibrant West End features high-rise condos and townhome communities with a host of amenities. Potomac Yard, in the City's northeast corner, is an evolving, highly walkable area of newly-constructed housing surrounded by parks and amenities. In recent years, strong interest in new multifamily construction at or near the city's four, soon to be five, Metro stations has driven rental units to 58% of the housing stock. The mix of housing in Alexandria provides options for a range of budgets, and the city has strong commitments in place and future plans to maintain and expand affordable housing opportunities.

Neighborhood	Description	Own	Rent
	Del Ray is a vibrant neighborhood that extends along Mount Vernon Avenue, a walkable main street boasting a lively mix of independent merchants and restaurants. This family-friendly neighborhood features a variety of single-family homes, both attached and detached, alongside parks and other neighborhood amenities.	$740K	$1,862
	Potomac Yard is an evolving neighborhood, just east of Del Ray, which has undergone significant growth recently. With a planned Metrorail station, it is transforming into a modern mixed-use, transit-oriented community. Housing options range from modern rowhouses to apartment buildings with full amenities.	$789K	$1,699
	Old Town is NOVA's truly authentic downtown. The neighborhood sits along the Potomac River and is rooted in centuries of history while still offering all of the modern conveniences of a great mixed-use community. In Old Town housing options range from historic townhomes to transit-adjacent contemporary apartments, all surrounded by Old Town's world-class restaurants, retail options, and historic sites.	$625K	$1,988
	The **West End** of Alexandria is one of the City's most demographically diverse areas with a wide range of housing options. The Cameron Station neighborhood offers single-family homes, townhomes, and condominiums bordered by two city parks and several dog parks. The West End is also home to numerous high-rise condominium buildings.	$365K	$1,592

Del Ray

Del Ray is "Where Main Street Still Exists," a vibrant neighborhood that extends along Mount Vernon Avenue, a walkable main street boasting a lively mix of independent merchants and restaurants. This family-friendly community features a variety of single-family homes, both attached and detached, alongside parks and other neighborhood amenities.

Residences in Del Ray offer choices for professionals at all stages of life. Renters can choose from a wide range of options, including modern, highly-amenitized buildings to rowhomes and garden-style apartments, all in close proximity to transit and amenities and affordable to many Amazon professionals. Owned homes are comprised of rowhomes, duplexes, and single-family houses of all styles. Homes in this popular neighborhood are in high demand.

Commuting times (min) to site

Method	Alexandria	National Landing
Walk	30	15
Bike	10	5
Transit	11	12
Drive	9	6

Shopping/retail

Del Ray is home to a booming scene of locally owned eateries. Neighbors and visitors start their day at one of Del Ray's many coffee houses including Swings Coffee which roasts coffee onsite. Around the corner on Mount Vernon Avenue there are some of the best spots in the region for creative comfort food and international eats like Stomping Ground (line forms before they open for their amazing biscuits, so get there early!), Junction Bakery, and Bombay Curry Company. For dessert, locals (and the Obama family) crave The Dairy Godmother for homemade custard or delicious treats from The Happy Tart, which offers all gluten-free baked goods and pastries.

The neighborhood's eclectic retail options include clothing, apparel, and toy stores. At VéloCity Bicycle Cooperative you can actually build your own bike out of used parts and attend workshops to learn DIY repairs. Del Ray is also all about dogs with most of the restaurants offering dog-friendly outdoor dining and some of them even catering to canines. You can pick up special gifts and dog toys at The Dog Store and natural treats and food at Nature's Nibbles. And for the health nuts, Del Ray is the go-to neighborhood, often referred to as "Well Ray" for its large community of holistic health businesses.

Entertainment/nightlife

Del Ray is home to The Birchmere one of Greater D.C.'s best concert venues that features nightly lineups of classic and up-and-coming jazz, country, folk, bluegrass and R&B artists in an intimate setting. Mary Chapin Carpenter, Lyle Lovett, Shawn Colvin, Jerry Jeff Walker, Dave Matthews, Vince Gill, John Prine, Emmylou Harris, Linda Ronstadt, and k.d. Lang are just a few of the artists counted as good friends of the Birchmere. Del Ray hosts a variety of community festivals and events throughout the year such as Art on the Avenue every fall, the Del Ray Music Festival and the Halloween Parade. On Saturday mornings year-round, the Del Ray Farmer's Market offers fresh fruit and vegetables, baked goods, and an assortment of meats and cheeses.

Potomac Yard

Just minutes from the Ronald Reagan Washington National Airport and the proposed National Landing HQ2 site is Potomac Yard an evolving urban community. The area has undergone significant growth in the past decade and has been approved for additional development. With a planned Metrorail station and existing Metroway BRT service, Potomac Yard is transforming into a modern mixed-use, transit-oriented community.

Housing options range from modern rowhomes to highly amenitized apartment buildings, all in close proximity to the neighborhood's parks and shops. As the community grows and transportation options improve with the planned Metrorail station, thousands of residential units have come online over the past few years and many more are planned. Existing apartments range in price, providing many options for professionals including several luxury buildings. Larger townhouses in the neighborhood offer more space and are home to many families today.

Commuting times (min) to site

Method	Alexandria	National Landing
Walk	58	on site
Bike	15	on site
Transit	18	on site
Drive	13	on site

Shopping/retail

The Potomac Yard Center is a destination retail location, offering a wide variety of shopping options including Target, Home Goods, Best Buy, Barnes & Noble, and T.J. Maxx. Across the street, a new mixed-use development also features a Giant Food. National fast-casual brands and local favorites make up the dining scene in the neighborhood, and the main dining and retail corridor of Del Ray is a short walk or bike ride away.

Entertainment/nightlife

Potomac Yard is a growing neighborhood with plenty of entertainment and recreational activities for both young professionals and families. Buzz Bakeshop offers freshly made baked goods and coffee, while restaurants such as Rustico Restaurant & Bar, along with dining spots in nearby Del Ray, are popular for happy hour, dinner, and weekend brunch. For movie lovers, the Regal Cinemas at the Potomac Yard Center shows all of the new releases and blockbusters.

Outdoors, Potomac Yard Park features athletic space (including tennis courts, basketball courts, and multi-use fields), playgrounds for children of all ages, picnic areas, and an interactive fountain. Several miles of bike and pedestrian trails connect to the park, with fitness equipment along the trail between the park and the Braddock Road Metro station. Many parks, along with running and biking trails, are also dog-friendly, providing plenty of space for the four-legged members of the family to exercise and socialize.

Old Town

Old Town is NOVA's truly authentic downtown- a nationally designated historic district founded in 1749 that George Washington called home. The neighborhood sits along the Potomac River and is rooted in centuries of history while still offering all of the modern conveniences of a great mixed-use community.

In Old Town, housing options range from historic townhomes to transit-adjacent contemporary apartments, all surrounded by Old Town's world-class restaurants, retail options, and historic sites. Rental homes include larger attached rowhomes and townhouses, as well as smaller units affordable to young professionals in multi-family buildings. For homeowners, townhomes and condominiums provide access to all of Old Town's amenities at all price points.

Commuting times (min) to site

Method	Alexandria	National Landing
Walk	20	35
Bike	7	13
Transit	5	13
Drive	5	10

Shopping/retail

Old Town's restaurant and retail district is the envy of the Greater Washington region. Strolling along King Street you can enjoy delicious meals at chef-driven restaurants like Majestic, Restaurant Eve, and Magnolia's on King. Old Town's historic buildings provide unique spaces to grab coffee or to experience stunning views of the Potomac River during a special occasion. In addition to big name national brands a plethora of antique shops and boutiques catering to fashion, culinary tools, and home design dot the historic district. The Torpedo Factory Art Center at the waterfront houses working studios and a number of galleries where you can purchase original pieces or hone your creative skills in a class- and even host special events and dinners!

Entertainment/nightlife

Old Town is well known for its festivals and parades which take place throughout the year. You can ring in the New Year at First Night Alexandria, attend the St. Patrick's Day Parade, or peruse art during the Alexandria King Street Art Festival. On any typical weekend you can enjoy one of many historic sites and museums, listen to live music, or visit the oldest farmers' market in the country on Saturday mornings. Old Town also offers a variety of fitness options and Pacers Running Store and Team Red, White, & Blue host weekly fun runs. Access to the Potomac River is a unique feature of the Old Town. Residents and visitors can arrive by water taxi or take a trip to explore regional destinations such as Georgetown, National Harbor, and George Washington's Mount Vernon. The City is in the process of implementing numerous upgrades to create a continuous waterfront connected by parks and trails.

Arlington – thoughtful planning, central location.

Arlington's great neighborhoods didn't happen by accident; they are the result of conscious design and planning. Aligning thoughtful, long-range planning with smart growth, urban design principles, and extensive community input, development activity is concentrated in key areas to build a strong economy and thriving business district, while the majority of land is dedicated to preserving residential neighborhoods. Arlington is truly the best of urban and suburban living.

Neighborhood	Description	Own	Rent
	Crystal City/Pentagon City's prime location along the Potomac offers stunning views of Washington, D.C. and the national monuments. Housing opportunities run the gamut from high-rise luxury apartments to single-family homes along Arlington Ridge. This neighborhood is a prime example of Arlington's transit-oriented development and successful smart growth policies.	$655K	$2,210
	The **Rosslyn-Ballston Corridor** benefits from smart growth planning and transit-oriented development that concentrates high-density, mixed-use development along a major transit corridor, while preserving and enhancing existing residential neighborhoods.	$545K	$2,192
	Columbia Pike reflects Arlington's diversity with its unique blend of housing, local shops, and a large concentration of ethnic restaurants. The Pike is often described as Arlington's "Main Street," and stretches for more than three miles.	$385K	$1,593
	Nestled along the George Washington Parkway among forested canopies, Washington Country Club, and Marymount University, **North Arlington**, including the neighborhoods of Country Club Hills, Maywood, and Bellevue Forest, is considered one of the premier executive housing locations in the region.	$1.6M	$1,848

Crystal City

Crystal City is innovative, active, artful, accessible, and green. Crystal City offers its residents an urban experience with an abundance of open space not typically found in such an environment. Among the high-rise buildings, there are blocks of quiet residential area surrounded by greenery and great places for a morning jog. Crystal City is one of the most accessible neighborhoods in the region. With the many different transportation assets including Metrorail connecting throughout the region, VRE access to suburbs west and south not covered by Metro, bike trails, commuter bus lines, Capital Bikeshare, ample parking options, not to mention being steps to the National Airport, residents, employees and guests are able to easily access various destinations with unmatched ease.

Unique to the area, residential options within the Crystal City neighborhood are predominantly in high-rise buildings, some owner occupied, but mostly rental apartments. Detached homes, rowhouses and townhomes are only a short walk away, but high rise living is the only option within the confines of the neighborhood boundaries. Most buildings were erected in the 1960s, but a renaissance has taken place in Crystal City as redevelopment has brought new street life and converted older office buildings to new luxury apartments. One of the newest additions to the Crystal City housing array is WeLive, a co-living building and offshoot of the hip co-working space WeWork. WeLive's Crystal City location is only one of two of its kind, an original concept with an emphasis on common areas and building-wide activities.

Commuting times (min) to site

Method	Capital View	National Landing
Walk	93	0
Bike	26	0
Transit	8	0
Drive	7	0

Shopping/retail

Crystal City features an energetic, underground shopping mall with a variety of local specialty stores and service providers. The Crystal City Shops include a variety of jewelry, clothing and shoe stores, health and beauty services and specialty gift shops.

Entertainment/nightlife

Crystal City offers a wide range of entertainment options. For theater lovers, award winning Synetic Theater produces four to five mainstage productions and two to three family series productions each season. For the fitness junky, options include rock climbing at Earth Treks or yoga at Mind Your Body Oasis. After getting in your workout, it's time to eat! Crystal City features an endless supply of dining options from white tablecloth restaurants like McCormick & Schmick's and Morton's Steakhouse, to specialty options like Spike Mendelsohn's Good Stuff Eatery and We, The Pizza, to trendy hotspots like Highline RxR and José Andrés' Jaleo.

Pentagon City

The Pentagon may be one of the world's largest office buildings but shopping also helped to put Pentagon City on the map. Pentagon City – located across the Potomac River from Washington, D.C., is a dining and shopping destination with one of the finest collection of shops, cafes, and restaurants he region has to offer. Rounding out the neighborhood are single-family homes, high-rise apartments, commercial buildings, and more than 3,400 residential units and 665 luxury hotel rooms. Situated within walking distance of Pentagon City Metro station — one of the busiest stations in the system — this neighborhood is a good example of Arlington's transit-oriented development and successful smart growth policies.

Pentagon City has housing options for all income levels and life stages. High rise apartments adjacent to Fashion Centre cater to young professionals and roommate situations. Pentagon Row is a mixed-use development with apartments above myriad retail options below. Young and growing families are drawn to the smaller single-family homes in the Aurora Highlands section of Pentagon City. Those seeking larger estate homes with amazing views of the surrounding area can find housing opportunities along Arlington Ridge.

Commuting times (min) to site

Method	Capital View	National Landing
Walk	92	15
Bike	25	4
Transit	6	2
Drive	10	5

Shopping/retail

Fashion Centre at Pentagon City, located just moments from the nation's capital and with its own entrance from the Metro, offers a world-class shopping experience. A scenic glass elevator ride to the third level reveals more than 170 stores including Macy's, Nordstrom, Apple, Coach and Zara. Leave Fashion Centre and take the quick walk to Pentagon Row, this outdoor shopping center features a variety of staples, including T.J. Maxx, DSW, World Market and Ulta.

Entertainment/nightlife

Pentagon City is more than just shopping. Visit Pentagon Row in the winter and take a lap around the ice skating rink, in the warmer weather partake in their many outdoor programs, including weeknight concerts and dog-friendly nights. Feeling fancy? The Ritz-Carlton, which is directly connected to the Fashion Centre, offers high tea each weekend. Looking for dining options? In addition to classic food court fare, Fashion Centre is home to Matchbox American Kitchen, Sugar Factory and the famous Shake Shack. If you're interested in more ethnic options, Pentagon Row is home to Lebanese Taverna, Saigon Saigon, Thaiphoon and Zen Bistro & Wine Bar.

Rosslyn

Located within walking distance to D.C., Rosslyn's active streets, bold cultural influences and frequent community events drive the business and social interactions that foster a dynamic, urban community. Rosslyn is Arlington's vibrant downtown and serves as an innovative economic, social and cultural hub for the region and beyond. It's an energetic, diverse and interconnected community that is home to businesses, retailers and residents. Rosslyn's unique access to multiple transportation options including Metro, major highways and walking and biking paths, bold cultural influences, sleek urban design, prominent companies and sense of community all work together to define Rosslyn as the area's premier, mixed-use urban center. It is one of Virginia's closest neighborhood to Downtown D.C.

Residences in Rosslyn are a mix of older apartment buildings and new modern luxury high rises. Along the western border of the neighborhood, Colonial Village offers garden-style condominiums appealing to young professionals and couples. Gaslight Square is a development of luxury loft-style condominiums attracting executives and professional athletes. In recent years, the neighborhood has encountered a significant delivery of new apartment buildings including Sedona and Slate also catering to the young professionals. Central Place apartments located in the heart of Rosslyn defines the height of rental apartment living in the Arlington. For those looking to purchase, Turnberry Towers offers luxury penthouse condominiums with stunning views. Once considered a predominantly office location, the recent addition of residential units and a strong pipeline of currently under construction and proposed unites, Rosslyn is quickly becoming a premier residential option in the region, particularly for those trading space for a closer-in location.

Commuting times (min) to site

Method	Capital View	National Landing
Walk	0	93
Bike	0	26
Transit	0	8
Drive	0	7

Shopping/retail

A compact ½ square mile, Rosslyn has over 400,000 square feet of restaurants and shopping…and it's still growing. With the completion of several office towers, numerous new retail and eateries are opening every month. Convenience retail and home stores like Target Express and Pier 1 Imports serve residents and workers. Lifestyle providers such as LavaBarre Specialized Fitness Boutique, Orange Theory and Gold's Gym cater to the active consumers in the neighborhood.

Entertainment/nightlife

Rosslyn has over 65 new and established restaurants, a bustling food truck scene and extensive outdoor dining. A variety of the newest and trendiest fast casual restaurants and eateries dominate the area as a sign of busy professionals that are always on the move. The Little Beet, Tasty Dugout, and the Perfect Pita are some of the newest additions to get a healthy bite to eat. A variety of eateries are located on every block, making it easy to find something you like.

If you're looking for entertainment, Rosslyn is the place to go. From movies in the park and pop-up beer gardens to outdoor concerts and farmer's markets, there is never a lack of things to do in Rosslyn. The new Central Place Plaza is a town square above the metro and will allow for additional outdoor events and dining. Located off the plaza is the newly opened Central Place Observation Deck. Showcasing the best views of D.C., the Deck will soon be a popular destination for tourists and locals alike.

Ballston

Ballston is a 25-block neighborhood of commercial and residential properties in Arlington, VA. With over one million square feet of retail space and 8,000 residential units, Ballston offers an array of living options in a dynamic community. Its blend of urban sophistication and neighborhood charm is unique to this region, boasting top universities, Fortune 500 companies, the Washington Capitals office and practice facility, and many research organizations nestled by upscale hotels, retail, green space and restaurants; all easily accessible by metro and major thoroughfares. Ballston Quarter, the nearly 590,000 square foot entertainment destination, is transforming the area into the epitome of "live, work, play". The highly-anticipated combination of dining, shopping, entertainment, apartment and office space is due to be completed in the fall of 2018.

Here, single-family homes blend with high-rise apartments, condos and townhomes with access to transit in mind. The tallest towers are centrally located and development tapers to mid-rise buildings and townhomes that eventually blend to single-family homes. The mix of housing attracts young professionals and young and growing families seeking a walkable environment, yet easily accessible by transit or car. Ballston Quarter will have over 400 apartments offering exceptional views in a mixed-use setting that promises a unique urban living experience.

Commuting times (min) to site

Method	Capital View	National Landing
Walk	48	98
Bike	18	28
Transit	8	24
Drive	9	12

Shopping/retail

The new Ballston Quarter development, set for delivery in September 2018, will transform the way Ballstontonians shop. When complete, Ballston Quarter will offer 360,000 square feet of retail space including national and private label fashion brands, local and regional fashion boutiques, recreational outfitters and home furnishings and accessories.

Entertainment/nightlife

Today, the Washington Capitals Iceplex, movie theater and budding foodie scene, touting a trio of Mike Isabella creations, make Ballston an exciting place to visit. Soon, when Ballston Quarter is complete, Ballston's foundation of entertainment options will be complimented and amplified. Ballston Quarter has already announced a variety of new entertainment options including 5 Wits, an interactive, immersive family entertainment center, Cookology, a recreational culinary school, and Punchbowl Social, a combination bar, restaurant, bowling alley and arcade targeted at young professionals. In addition, Ballston Quarter will feature Quarter Market, a food court of unique, trendy quick serve concepts, and a handful of sit down options, including the popular D.C. spot, Ted's Bulletin.

Ballston hosts the Taste of Arlington, one of the largest food+beer+wine+arts festivals showcasing the diversity of Arlington's food scene and attracting over 50,000 food lovers from all over the region. This exciting and highly anticipated annual festival transforms Ballston into a vibrant dining, shopping and family-fun festival for all ages.

North Arlington

Nestled along the George Washington Parkway among forested canopies, Washington Country Club and Marymount University, North Arlington, including the neighborhoods of Country Club Hills, Maywood, and Bellevue Forest, is considered one of the premier executive housing locations in the region. With nearly 12,000 residential units, the area is comprised of predominantly single-family detached homes. Average listing price for three-bedroom homes are in the $800,000 range, while larger estates are listed at $1.5 million and up.

Commuting times (min) to site

Method	Capital View	National Landing
Walk	74	140
Bike	29	51
Transit	35	48
Drive	9	14

Shopping/retail

As a predominantly residential location, most of the shopping and retail options are within numerous neighborhood centers conveniently located around the area. Several grocery and drug stores serve the neighborhood and myriad dining establishments range from fast casual to ethnic restaurants. The award-winning Peter Chang restaurant is located in the Lee-Harrison Center.

Entertainment/nightlife

North Arlington is strictly a residential neighborhood although located within a quick Uber ride to the numerous entertainment and nightlife options along the Rosslyn-Ballston Corridor. The redevelopment of Ballston Quarter will provide even more entertainment options above the current offerings of the Capitals Ice Rink and movie theaters. Several new restaurants and social clubs are slated to open in Fall 2018. Much of the social activity in North Arlington is centered around Washington Golf and Country Club, often considered one of best private clubs in Washington, D.C.

Clarendon

Clarendon hums with activity morning, noon and night. Located in the heart of Arlington, Virginia, Clarendon is known for lively nightlife, the perfect location for a great date night at any age, and as a center of activity for the young professional crowd. If you're looking for fun in the evenings, you'll always find it in Clarendon. It's easy to be drawn to Clarendon, a neighborhood that defines urban chill. You will find shoppers browsing at Market Common Clarendon, families enjoying a weekend brunch on the patio and visitors exploring Clarendon's dining and entertainment options.

The neighborhood offers a diverse array of housing options from high rise apartments and condos within steps from the metro station to town homes just outside the center area to highly sought after Cape Cod, Colonial, Tudor single family homes on the quaint tree-lined streets of Lyon Village. While prices tend to be higher than average in the metro area, residents prize the pedestrian-friendly neighborhood, where restaurants, grocery stores and other retail establishments are within a short stroll. Clarendon is a welcoming neighborhood for all ages and types - hipsters drawn to the local music scene, young professionals commuting by Metro to jobs on K Street or Capitol Hill, families seeking the area's award-winning schools, and retirees who've owned their homes for generations. Clarendon is also located in one of the nation's most culturally-diverse areas and is home to numerous ethnic restaurants.

Commuting times (min) to site

Method	Capital View	National Landing
Walk	27	85
Bike	9	34
Transit	5	21
Drive	8	11

Shopping/retail

At the heart of Clarendon sits Market Common Clarendon, an outdoor mixed-use development of retail, restaurants and residential buildings. Market Common features a combination of name-brand shops like Apple, Barnes & Noble and Whole Foods Market, as well as local boutiques like South Moon Under clothing shop, lou lou fashion accessories and Pacers Running, a shop that sells running related merchandise and hosts social running groups and charity races.

Entertainment/nightlife

Clarendon is commonly known as the center of nightlife in Arlington. Clarendon offers a variety of live music venues including Galaxy Hut, Clarendon Ballroom and Clarendon Grill. Patios and rooftops line the streets and fill quickly on a warm day. Tapas restaurants and sports bars are a common theme in Clarendon and successfully draw the area's young professionals on evenings and weekends. In addition to trendy hot spots, Clarendon is home to a variety of fine dining options. Whether you're looking for a great brunch spot, a happy hour cocktail or the perfect date night, Clarendon has something for everyone.

In Fairfax, find what you want, where you want it.

As Fairfax County has grown and transformed, so have the housing opportunities available to residents. From estates and classic suburban single-family colonials and townhouses to modern condos and apartments befitting a more urban lifestyle, Fairfax County has something everyone can call home. Many of the new homes being built today are along the county's Metrorail lines, and most of those are amenity-rich, high-rise apartment buildings. In addition, many who work in Fairfax county take advantage of the reverse-commute from neighborhoods in Arlington and D.C.

Neighborhood	Description	Own	Rent
	One of the nation's best-known planned communities, **Reston** features a broad variety of housing, extensive retail centers, trails, golf courses, and other recreational facilities. Reston's four man-made lakes cover 125 acres. The upscale Reston Town Center is one of the most popular shopping and entertainment destinations in Northern Virginia. This vibrant town center provides retail, restaurants, high-rise office buildings, and residential offerings.	$445K	$1,950
	Located close to Washington Dulles International Airport, Eleanor C. Lawrence Park, and Fair Oaks Mall, **Centreville** offers a blend of the old and the new with a historic district, modern homes, new shopping areas, and a view of the Blue Ridge Mountains. An old-growth deciduous forest fills the parks and natural areas of this residential community.	$410K	$1,850
	The "downtown" of Fairfax County, this urbanizing area features high-rise apartments, condominiums, and townhouses conveniently located among destination shopping malls, office centers, and four Metrorail stations. **Tysons Corner** is being transformed into a more urban, walkable community that includes residences and public spaces.	$507K	$2,045
	Herndon is located along the Dulles Toll Road and is home to the proposed Innovation Station site. The community has small-town charm and a strong sense of community. It includes a historic town center with older homes, as well as newer homes and retail centers. More than 100 restaurants, many serving ethnic cuisine, are nestled in and around downtown. The W&OD Trail runs through Herndon and complements the town's 11 parks, the community center, and golf course. Residents enjoy a wide variety of free concerts and special events on the Town Green, including the Herndon Festival and Friday Night Live. Herndon is also home to the award-winning NextStop Theatre.	$600K	$2,050

Reston

One of the world's best known planned communities, Reston is located along the Dulles Toll Road. Named for its visionary founder, Robert E. Simon (RES-ton), it features a broad variety of housing, extensive retail centers, trails, golf courses and other recreational facilities. Reston's four man-made lakes cover 125 acres. The upscale Reston Town Center is one of the most popular shopping and entertainment destinations in Northern Virginia. This vibrant town center provides retail, restaurants, high-rise office buildings and residential. Neighborhoods in Reston are architecturally diverse, with a mix of housing types from condominiums at Lake Anne Plaza and Reston Town Center to contemporary townhouses along Lake Thoreau and Lake Audubon, to colonial homes in more suburban neighborhoods nestled along trails in Reston's famed wooded areas.

Commuting times (min) to site

Method	Innovation Station
Walk	93
Bike	26
Transit	6
Drive	9

Shopping/retail

Today we are taking a Capital Rideshare bike from Reston Town Center to the Wiehle-East Metro Station. First up is riding around the streets of the town center itself and deciding which of the upscale retailers and specialty shops I want to visit: Apple, Anthropologie, Allen Edmonds, Banana Republic, J. Crew, Pottery Barn and Talbot's? So many stores to choose from here. Of course, we'll head from here over to Lake Anne Plaza and see what's happening at the Reston Used Book Shop and grab a cup of java at the Lake Anne Coffee House or see what's featured at The Wine Cabinet. Arrgghh, hubby forgot the shopping list so I guess we won't stop at Whole Foods, Harris Teeter or Trader Joe's today. Oh well, when we get to Reston Station we can stop for bread and cheese at the farmers market there. Then on to Metro and the Smithsonian Folk Life Festival on the Mall in D.C.

Entertainment/nightlife

Reston has really delivered on the "live-work-play" thing, and tonight we're hitting the town – using Lyft, of course. First stop is Reston Town Center because we haven't gone ice skating yet this season and Reston's own Olympian Maame Biney has me hankering to get on the ice. Then it's over to Lake Anne Plaza. Yep, we were at the coffee house in Lake Anne earlier but tonight we're heading to the Lake Anne Brew House for the latest batch of pale ale. Then do we want to get to Founding Farmers at Reston Station, or do we want to hit Mon Ami Gabi at the town center? Decisions, decisions. While we're in the car we'll update our calendars with reminders about the Northern Virginia Fine Arts Festival, Taste of Reston and the Reston Holiday Parade next November (yes, voted one of the best in the nation by USA Today readers). Last stop of the night: the Reston Community Center for a night of swing dancing. And away we go!

Tysons Corner

Tysons Corner has long been called Fairfax County's downtown thanks to office towers (tenants include five Fortune 500 companies) and two super-regional malls (Tysons Corner Center and Tysons Galleria have more than 3 million square feet of retail space combined). Now that four stations on Metro's Silver Line have opened, Tysons Corner is quickly urbanizing into one of the Washington area's most prominent places to live and play as well as work. Fairfax County's plan for the Tysons area envisions 100,000 people living here by 2050, and the transformation has begun in earnest. Development has been purposely focused near the four rail stations. At the McLean station, Capital One is building a new headquarters (tallest building in the region except for the Washington Monument) and a mixed-use neighborhood that includes a Wegmans grocery store and a 1,500-seat performing arts center. At the Tysons Corner station, more apartment and office towers are expected to join the 26-story Vita. At the Greensboro station, cranes announce the coming of the Boro, a mixed-use development that will include apartment towers, the largest Whole Foods Market in the metro area, and a 16-screen movie theater. Two 20-story apartment towers, the Adaire and the Ascent, have been built at the Spring Hill Metro Station, and plans call for more mixed-use high-rise development that includes public arts space. Tysons Corner is well on the way to becoming a 24-hour destination.

Commuting times (min) to site

Method	Innovation Station
Walk	257
Bike	80
Transit	22
Drive	16

Shopping/retail

Today's the day: my Tysons Corner shopping excursion! I've made my list and I am checking it twice. Of course, I will take the Silver Line, get off at the Tysons Corner Metro Station stop and walk to Tysons Corner Center. Where the stores are, indeed – 250 of them! First, I will make a beeline to the Apple Store to get a new phone. Then it's on to L.L. Bean to check out some clothes for the next time I hike Old Rag and to Under Armour for some running gear. Over to Nordstrom next to help Mom pick out that mother-of-the-bride dress she is fretting about. Then we'll cross the street and check Tiffany for that bracelet she wants. OK, back on my own again – dash back to the plaza at the mall, stop at Shake Shack for a burger and a concrete (I've earned it), then head to the other side of the Metro station and walk to Tysons Galleria. Almost 100 stores here, but I've had my eye on a purse at Kate Spade, a sundress at Lilly Pulitzer and sandals at Tory Burch that will be great for spring. They're both right near Saks, so I'll drop in there too. Oh right, better stop at Thomas Pink for a shirt for hubby and check out the haute couture at Neiman-Marcus just for fun. Whew! Before I get back on Metro, I am going to head up to the top level of the Galleria for the Isabella Eatery dining hall. Hmm, which of Mike Isabella's eight concepts do I want to sample tonight? Tapas at Arroz!

Entertainment/nightlife

Finally done with work. As it happens, I'll be spending most of the weekend right here in Tysons Corner. Our apartment is so close to great stuff. Right after work we'll Metro over to Founding Farmers for happy hour and walk over to Earl's Kitchen to pre-game before we catch a movie on the plaza at Tysons Corner Center. This plaza was such a great addition to the area – I loved seeing Pentatonix here and skating on the rink too. Then tomorrow I'll be back. I signed up to rappel over the side of the Hilton to raise money for Habitat for Humanity. Hubby thinks I'm nuts, but I'm ready. After that we'll catch the new Cirque de Soleil show at Tysons II, and grab some pizza at Graffiato, part of Mike Isabella's dining hall. Sunday? Why, we've got tickets to the matinee production at 1st Stage. I am constantly amazed how more people don't know that a professional theater company is based here in Tysons. After the show we'll Uber over to the Tysons Biergarten to see which German beers they are featuring this week. OK, maybe I'll sample some homemade bratwurst too while I'm there. Wow, what a weekend. At least I can relax at work Monday.

Herndon

The Herndon community is located along the Dulles Toll Road and is home to the proposed Innovation Station site. The Town of Herndon, incorporated in 1879 and named for a sea captain who went down with his ship, retains its rustic charm and a strong sense of identity. It includes a walkable, historic downtown complete with Town Green, Old Town Hall, historic train station and Victorian homes. More than 100 restaurants, many serving ethnic cuisine, are nestled in and around downtown. The W&OD Trail, named for an old railroad, runs through Herndon and complements the town's 11 parks, the community center and golf course. Residents enjoy a wide variety of free concerts and special events on the Town Green including the Herndon Festival and Friday Night Live. Herndon is also home to the award-winning NextStop Theatre. The community surrounding the town features all the amenities of suburban living, including newer neighborhoods and retail centers.

Commuting times (min) to site

Method	Innovation Station
Walk	30
Bike	9
Transit	0-4
Drive	4

Shopping/retail

This delightful Saturday morning I am riding the W&OD trail and stop at the farmers market in downtown Herndon to check out the produce from western Loudoun County or the Shenandoah Valley. We'll head over to Green Lizard Cycle to check out the newest gear – and get a cup of coffee to fuel up before to head over to Right On! Records to investigate the latest vinyl offerings. Oh right, need to stop at the Elden Street Tea Shop to bring back some Darjeeling for hubby, or maybe I'll pick up some beans at Weird Brothers Coffee. Next stop: N'Used, to see what the upscale consignment boutique has just put out on the racks. As I head over there, I'm going to survey the area where that just-approved 5-acre project will add homes, a bunch of new stores – and an 18,000-square-foot arts center. OK, better get home. Need to get to my session at Down Dog Yoga, then hit the Giant or Harris Teeter for a grocery run before taking in a movie at Worldgate Centre.

Entertainment/nightlife

With art galleries, walking tours, restaurants representing all ethnicities and recreational venues including golf, tennis and hiking trails, Herndon has something for singles, couples and active families. Tonight, though, let's hop an Uber and head for some of the more interesting spots in town. First stop, the Aslin Beer Company to sample some of the IPA that has attracted a cult following. Then on to dinner – should it be at the venerable Ice House Café, or how about we try the borscht at Russia House this time? After dinner, we'll catch up with friends at Jimmy's Tavern. As we catch a ride there, we can make plans for the annual Herndon Festival and decide what crafts we want to pick up, or we can think about the Labor Day Jazz Festival, or what show the NextStop Theater will produce next.

Loudoun – a fast-growing, suburban frontier.

Loudoun County has long been a favored location to live in Northern Virginia as the regional economy continues to be one of the fastest-growing areas of its size in the country for population growth and new commercial investment. The unparalleled growth is transforming eastern Loudoun from suburban to urban, while the rural western portions of the County maintain serene and pastoral settings for estate homes, farms, wineries, craft breweries and other value-add agricultural businesses.

Residential communities include a range of housing types, with historic neighborhoods, suburban homes in idyllic settings, and newer communities with modern townhomes, condos, and apartments built around walkable urban places. Neighborhoods in many areas of Loudoun County continue to be built out, and the Metrorail stations opening in 2020 are a catalyst for new mixed-use, transit-oriented development that will help Loudoun continue to meet the demand for modern housing styles popular with its highly skilled workforce.

Neighborhood	Description	Own	Rent
	Sterling is a diverse and long-standing community in eastern Loudoun County popular among residents moving to the area. It has a mix of housing types, with increasing numbers of townhomes and multifamily units as infill residential development has come online in mixed-use areas such as Cascades Overlook and around Dulles Town Center.	$425K	$2,050
	Ashburn is a suburban community with multiple master-planned residential neighborhoods and home to Ashburn Station, the last stop on Metro's Silver Line. High-density, mixed-use development is concentrated around the Metro and in popular walkable town centers.	$505K	$2,250
	Leesburg is Loudoun's cultural anchor with historic buildings dating back to the mid-1700s. Shops, restaurants and businesses are predominately locally-owned. Housing is a blend of the old and new, ranging from authentic Victorian and Craftsman homes to modern apartments and condos in mixed-use walkable communities.	$450K	$2,140
	The **Potomac Falls/Cascades** district is a quiet, established neighborhood north of Sterling featuring exceptional parks and outdoor amenities. Nearby parks offer views and access to the Potomac River and Potomac Heritage Trail, along with family-oriented outdoor activities.	$420K	$1,765

Attainable and desirable housing options

While price points look and feel similar to major population centers on the West Coast, home purchasers and renters can get two to three times more for the money in Loudoun.

Neighborhood	Homeowner-occupied Housing Units	Median Price	Renter-occupied Housing Units	Median Rent
Sterling	6,883	$426,300	2,594	$2,054
Ashburn	12,200	$505,055	4,670	$2,246
Cascades	10,814	$422,000	3,861	$1,764
Leesburg	11,321	$451,755	4,975	$2,143

Commuting times (min) to site

Highlighted neighborhoods are conveniently close to the Project Site, and the Dulles Greenway offers congestion-free access to the rest of Loudoun, Northern Virginia and Washington. D.C.

Method	Sterling	Ashburn	Cascades	Leesburg
Drive	2	4	7	13
Bike	3	10	23	54
Transit	5	10	20	30
Walk	15	30	79	203

Shopping/retail

A mix of major retailers and small businesses provides local residents and the region a multitude of goods and services. Highlights include:
- Walkable retail at mixed-use Villages at Leesburg or One Loudoun
- Farmer's Market at Cascades Marketplace
- Warehouse stores for stocking the essentials (Two Costcos and a Sam's Club)
- Specialty supermarkets such as Wegmans and Aldi
- Shopping the brands at Dulles Town Center Mall or Leesburg Corner Premium Outlets
- Arts and Sports gear (Melodee Music, Alpine Ski Shop, A-1 Cycling)

Entertainment/nightlife

Loudoun County's 40+ wineries have emerged as the leading Virginia producers of vinifera and New World grape wines. Craft breweries are also on the rise, with over 20 located in Loudoun. 14 of those breweries are less than one mile from the regional W&OD bike and pedestrian trail that runs by the Project Site.

Leesburg is Loudoun County's historic downtown, which has a vibrant walking district with a lively mix of independent restaurants, merchants, and arts and performing venues. One Loudoun is another "downtown" within seven miles of the Site that is a focal point for dining and entertainment such as Alamo Drafthouse Cinema, Eddie Merlot's and Top Golf. Multiple movie theatres anchor different walkable mixed-use places throughout eastern Loudoun.

The Potomac River is accessible just 15 miles from the Project Site at Algonkian Regional Park. Other closer parks such as Claude Moore offer residents and visitors miles of hiking trails, fishing ponds, recreation centers, a sportsplex, and a heritage farm museum. Top-notch athletic fields and fitness facilities can be found in every neighborhood, and indoor recreation for the kids like Atomic Trampoline or Pump It Up are just a short drive away.

Photos

Sterling/Cascades

Ashburn

Leesburg

You'll find community no matter where you go.

No matter where Amazonians choose to live, they will find warm, welcoming, and diverse neighborhoods with incredibly strong school systems, supportive and safe communities that have been proven to have a meaningful and substantial impact on improving children's future.

The community you choose makes a difference			
	Residential integration index, white/non-white	Violent Crime per 100,000	Community's impact on your child's future earnings
	Live	Protect	Thrive
Locality	0 = complete integration, 100 = complete segregation	0 = no violent crime	
Northern Virginia	32	107	11%
Boston, MA	50	707	-6%
Chicago, IL	53	1,105	-13%
Montgomery County, MD	35	168	9%
Newark, NJ	60	937	-9%
New York, NY	53	573	-11%
Washington, DC	64	1,132	-3%
Atlanta, GA	62	1,084	-11%
Dallas, TX	56	762	-5%
Denver, CO	38	657	-9%
Philadelphia, PA	60	989	-2%
Austin, TX	33	408	-9%
Columbus, OH	45	522	-9%
Indianapolis, IN	47	1,374	-13%
Los Angeles, CA	36	719	-10%
Miami, FL	57	887	1%
Nashville, TN	43	1,102	-9%
Pittsburgh, PA	53	782	-4%
Raleigh, NC	36	17	-11%
Seattle	33		9%
Source:	County Health Index, ACS 5-year estimates	FBI, Uniform Crime Report 2016	New York Times, Raj Chetty

14th Street Corridor

On any night of the week, you'll find D.C.'s hip and hungry crowding into the restaurants and bars along the 14th Street Corridor, which runs through the heart of Logan Circle. D.C.'s historic home to jazz, music and restaurants has grown up organically as pioneering Washingtonians moved into the up-and-coming area. A diverse mix of restaurants serving delicious dishes and creative cocktails from morning to night makes the neighborhood a must-visit or live for any true foodie. The 14th Street Corridor is also walking distance to some of the hottest theaters, art galleries and luxury living in the city. Logan Circle was voted "D.C.'s top gay neighborhood" and celebrates the LGBTQ Community.

The 14th Street neighborhood offers a great mix of housing options, from small townhouses to large, multi-family units and sprawling single-family homes. Many of the larger Logan Circle homes for sale have been around for quite some time, giving the neighborhood its signature charm and character. Many of the properties in have been converted into multi-family properties, with single-family homes now divided among several renters. For many property owners, this presents an opportunity to live in a portion of their home while receiving rental income as well. In recent years, the neighborhood has welcomed larger-scale mixed use and adaptive reuse developments with new rental apartments built above and thoughtfully integrated with ground floor commercial uses.

Commuting times (min) to site

Method	Capital View	National Landing
Walk	60	90
Bike	26	33
Transit	27	25
Drive	18	16

Shopping/retail

Amongst the vibrant restaurant and sidewalk culture of 14th street sits a thriving center for home décor and design. Popular stores like Room & Board, Mitchell Gold + Bob Williams and West Elm sit next to local offerings like Urban Essentials and Miss Pixie's. This edgy retail destination is perfect for furnishing an entire home or picking up accessories for an apartment or condo.

Entertainment/nightlife

With an eclectic mix of bars, restaurants, galleries, coffee shops and music venues, the 14th Street Corridor has something for everyone. Whether its stopping by Black Cat for a concert, seeing a play at Studio Theatre, dining at the iconic Le Diplomate or searching for the hidden Left Door Speakeasy to enjoy a unique cocktail, locals and visitors throng to this exceptional streetscape for its endless allure and ceaseless excitement.

Bethesda

Bethesda is an idyllic blend of city living and access to suburban comforts, and is often considered a destination for residents throughout the region. The core is located in downtown Bethesda adjacent to the Metro station. With the newly developed high rise apartment buildings and offices, restaurants, shops, gyms, and even two movie theaters, the feeling is urban. However, wander mere blocks from the center, and you've entered Mayberry-esque tree-lined suburban streets. This balance makes Bethesda a desirable urban suburb – convenience within walking distance, but offers housing choices appealing to multiple ages and lifestyles.

Commuting times (min) to site

Method	Capital View	National Landing
Walk	129	210
Bike	45	66
Transit	31	40
Drive	27	31

Shopping/retail

Bethesda's thriving urban community is home to a variety of attractions, parks, recreational facilities, shops, restaurants and entertainment venues. Bethesda is a popular destination to visit from around the capital region and has convenient access to downtown Washington, D.C. and I-495. Located within 7 miles of Washington, D.C., Bethesda Row is located in Montgomery County at the intersection of Bethesda Avenue and Arlington Road in Bethesda, MD. This property has a total of 533,000 square feet of retail, including over 30 clothing and specialty stores, Landmark Theatre, over 30 sit downs and fast casual restaurants, and a gym, as well as offices and a residential community, Upstairs at Bethesda Row.

Entertainment/nightlife

Downtown Bethesda is one of the best places to dine in Montgomery County, Maryland. The area is known for its fine restaurants offering a wide range of cuisines from contemporary American and Mediterranean to French and Latin American fare. During the warmer months of the year, enjoy many outdoor dining options. After grabbing a bite, see a concert at the Strathmore or a show at Round House Theatre. Bethesda is known to have one of the best nightlife scenes in Maryland. Places like Villan and Saint, a rock 'n' roll music hall, American Tap Room, Tyber Bierhaus and The Barking Dog, a pub with an upstairs dance floor, are favorites in downtown Bethesda. If you're interested in a two-for-one deal, visit The Bethesda Blues & Jazz Supper Club, listed on the National Historic Register, this 1938 concert hall hosts performances of live music in a chic setting. Its high-end menu makes this a perfect spot for a leisurely, romantic date night.

Capitol Hill

Capitol Hill is one of the Washington D.C.'s most popular places to live, with 19th-century rowhouses plus a vibrant dining and nightlife scene. Politicos, young staffers and tourists alike head to the neighborhood for its government buildings like the U.S. Capitol and the Supreme Court, the region's rail transit hub, Union Station, and the surrounding historic, walkable, restaurant-filled blocks. Nineteenth and early 20th-century rowhouses (think turrets, stained glass and ironwork) lead to throwback commercial zones. Eastern Market, an 1873 redbrick building, houses grocers, bakers and pasta makers plus a lively weekend bazaar with produce, crafts and antiques. The nearby micro-neighborhood of Barracks Row centers on 8th Street SE, where vintage storefronts hold oyster houses, pubby bars and foodie-focused restaurants. Closer to the Capitol, Massachusetts Avenue NE has multiple restaurants and longtime watering holes.

Originally a place to house members of Congress and their families, Capitol Hill now attracts a mix of residents from young professionals and hill staffers, growing families seeking to take advantage of the numerous parks and squares, as well as empty nesters all desiring to live in a historic district. The neighborhood offers predominantly older, historic townhomes that have been renovated with all the modern conveniences. Several homes have been restored to house one family but many target multiple renters or those in group situations. Larger condominium and newer high rise apartment developments can be found north and east of Capitol Hill along Potomac Avenue and towards Navy Yard adjacent to Nationals Park.

Commuting times (min) to site

Method	Capital View	National Landing
Walk	100	102
Bike	35	29
Transit	18	22
Drive	13	10

Shopping/retail

Eastern market in Capitol Hill is the place to see and be seen on a sunny weekend morning in Washington, D.C. The most common itinerary includes sipping on a mimosa at brunch before heading to the market that takes over the streets and sidewalks. At the craft fair one can shop locally made jewelry and art, handmade soaps and vintage clothing and furniture. Then, you can pop into the farmer's market and pick up fresh meat and produce for the week and grab a bouquet of flowers to brighten your home.

Entertainment/nightlife

Capitol Hill offers a dynamic mix of entertainment and dining options. Here, you can start your day by exploring the United State Botanic Garden, featuring cacti, orchids and a two-level tropical rainforest. Feeling tired? Stop in to Pineapple & Pearls, this unique café serves coffee by day and is a two MICHELIN star restaurant by night. In the evening, you can catch a play at the Folger Shakespeare Library, an intimate playhouse hosting classical plays, concerts and readings throughout the year. And to top off night, end with dinner and cocktails at a D.C. cult favorite and MICHEIN star restaurant, Rose's Luxury.

Georgetown

A nationally-designated historic district, Georgetown is a charming, bustling port city on the banks of the Potomac. Today, Georgetown is known as a neighborhood with a vibrant business district, an active residential community, and a popular recreational waterfront. It is D.C.'s premier destination and 'playground' for shopping, dining, history, fitness, and family fun. Georgetown offers a variety of 450+ shopping, dining and entertainment options in a beautiful, historic setting. M Street, Georgetown's main avenue, is recognized as one of the best shopping streets in the country. The intersection of M and Wisconsin Avenue is the heart of Georgetown, with boutique-lined streets extending in all four directions. Known for its quaint cobblestone streets and 18th and 19th century architecture, the neighborhood is a delightful mix of past and present that sets it apart from the rest of Washington, D.C.

Home to dignitaries, executives, and university students, historic living in Georgetown provides European charm in a walkable neighborhood. Housing is principally upscale historic rowhouses with varying and interesting architectural features, styles and history. While some of these spectacular residences have been split up to accommodate students attending Georgetown University, most have been restored to their original glory for mature families, including senators and ambassadors. While most of the housing stock is million-dollar plus rowhouses, there have been newer condominium developments that have delivered in recent years, some of which are part of hotels and take part in the rich amenity and concierge programs. Along the waterfront, older condominiums cater to the young professionals and empty nesters seeking a Georgetown address.

Commuting times (min) to site

Method	Capital View	National Landing
Walk	22	103
Bike	10	29
Transit	11	37
Drive	5	13

Shopping/retail

Besides its university, Georgetown is best known for its wide-ranging retail scene. With over 150 stores, upscale brand names are showcased along M Street. Looking for something more unique? Local shops and boutiques can be found off small side streets and tucked away into seemingly residential rowhouses. A short walk north up Wisconsin Avenue brings you to Book Hill and a quaint collection of independent shops, galleries and antique stores.

Entertainment/nightlife

Looking for entertainment? Check out sprawling Pinstripes for a game of bocce or bowling, sip a drink riverside at one of the Washington Harbour's waterfront bars and restaurants or take in a live jazz show at Blues Alley. Other options include a visit to the always bustling Georgetown Cupcakes or the waterfront-facing Malmaison, a cafe that offers crave-worthy brunch favorites and delicious pastries. A couple of other unique and raved-about favorites: Fiola Mare at the waterfront, consistently ranked one of D.C.'s top fine dining restaurants and, of course, D.C.'s very first "cat cafe", Crumbs & Whiskers, where you can enjoy coffee and pastries while snuggling with dozens of adoptable fur balls.

A1.d(ii). Options (apartment occupancy rate, condominiums, multi-family, single-family, etc.)

A1.d(iii). Cost (apartments, condominiums, multi-family, single-family, etc. – please specifically include data on [i] 3 bedroom, 2 bath, single-family homes and [ii] 1 and 2 bedroom apartments)

We offer a diversity of options to own or rent.

NOVA residents can choose the housing option and neighborhood that suits them. And one of NOVA's special beauties is that not only is the region a melting pot of races and cultures, but so are the neighborhoods, with NOVA home to the highest rates of residential integration among its Top 20 peer cities.

Northern Virginia has a diverse set of housing options, depending on buyer preferences.

While sticker prices to own seem high, a greater share of people own in the region than in NYC, Boston, or LA. One of the underlying drivers of these higher sticker prices is that people in NOVA choose to have more space… and the region certainly can accommodate these preferences. For instance, NOVA's homes are larger than those in its peer cities, with 6.1 median rooms per house versus an average of 5.4 across other peer MSAs. The higher home prices in NOVA reflect these preferences.

Median rooms per home		Median cost to own USD	Median cost to own per room USD
Washington, D.C. MSA	6.1	387,400	63,508
Philadelphia	6.1	237,700	38,967
Atlanta	6.0	173,300	28,883
Pittsburgh	5.9	216,600	36,712
Raleigh	5.9	287,400	49,552
Denver	5.8	144,700	24,948
Indianapolis	5.8	183,400	31,621
Nashville	5.8	161,700	28,368
Columbus	5.7	379,200	68,945
Boston	5.5	216,000	39,273
Chicago	5.5	163,900	29,800
Dallas	5.5	223,500	42,170
Austin	5.3	403,300	84,021
NYC-Newark MSA	4.8	493,900	105,085
Los Angeles	4.7	215,700	45,894
Miami	4.7		

Source: American Community Survey

On a more local basis, the four localities in Northern Virginia offer a diverse stock of owner-occupied units of all sizes and styles.

The figure below presents a snapshot of the owner-occupied units available in each locality based on 2016 Census microdata. Additional details are available in the site-specific housing responses in the Real Estate section.

Owner-occupied units

	Alexandria	Arlington	Fairfax	Loudoun
Available units				
2 bedrooms	3,759	4,838	5,217	41,808
3 bedrooms	8,995	12,947	43,790	30,655
4 bedrooms	4,672	10,104	85,649	37,697
Average home value ($000)				
2 bedrooms	$598	$505	$459	$362
3 bedrooms	$784	$768	$521	$394
4 bedrooms	$821	$1,048	$720	$567

Source: American Community Survey, 2016 1-year estimates

Recent condominium trends have skewed towards smaller developments with more luxurious interiors and located in premier neighborhoods.

From a range of 130-150 units at the end of the last decade for the D.C. metro area, new condo projects have averaged around 70-80 units per project. In addition to the trend towards smaller, more luxurious projects, condo development has shifted towards the District and away from the metro areas. For instance, in 2009 less than a quarter of all new condo contract sales were concentrated in the City compared with over a third of sales activity today. Nonetheless, the project pipeline is strong for the entire metro area with planned projects in Tysons Corner, Arlington, Reston, and two-over-two ("stacked townhomes") development projects in Loudoun. Projects are also planned for D.C. neighborhoods such as Navy Yard, NoMa, and Chinatown.

Greater D.C. has been expanding at a rapid pace to meet the increased demands for rental units throughout the metro area.

Though rents remain relatively high, Greater D.C. is one of only two cities in the peer set to have experienced single-digit rent growth (excluding Pittsburgh's rent contraction), growing 7% over the last five years according to a recent CBRE report.

Average rent, 1Q2017 USD	5-year rent growth Percent
*New York City — 4,418	17%
Los Angeles — 2,214	24%
Boston — 2,154	20%
Newark — 1,732	12%
Washington, DC — 1,696	7%
Miami — 1,664	22%
Chicago — 1,512	21%
Denver — 1,395	39%
Philadelphia — 1,278	8%
Toronto — 1,233	12%
Austin — 1,201	23%
Nashville — 1,123	33%
Atlanta — 1,108	29%
Dallas — 1,094	26%
Pittsburgh — 1,075	-3%
Raleigh — 1,039	20%
Columbus — 874	19%
Indianapolis — 820	15%

* Manhattan rent prices shown
Source: CBRE, Scoring Tech Talent, 2017

Rents have been contained largely because of Greater D.C.'s heightened annual apartment absorption rates, of which NOVA comprises a leading share.

Over the last few years, the region has been adding nearly 10,000 units annually, well above its historical trends. The direct, and very positive, implication for renters in the region is that rents have remained relatively flat, and are expected to remain so for the near future.

Looking more closely at one- and two-bedroom apartments, NOVA has plenty of options for those looking to rent. The figure below presents a snapshot of the renter-occupied units available in each locality based on 2016 Census microdata. Additional details are available in the site-specific housing responses in the Real Estate section.
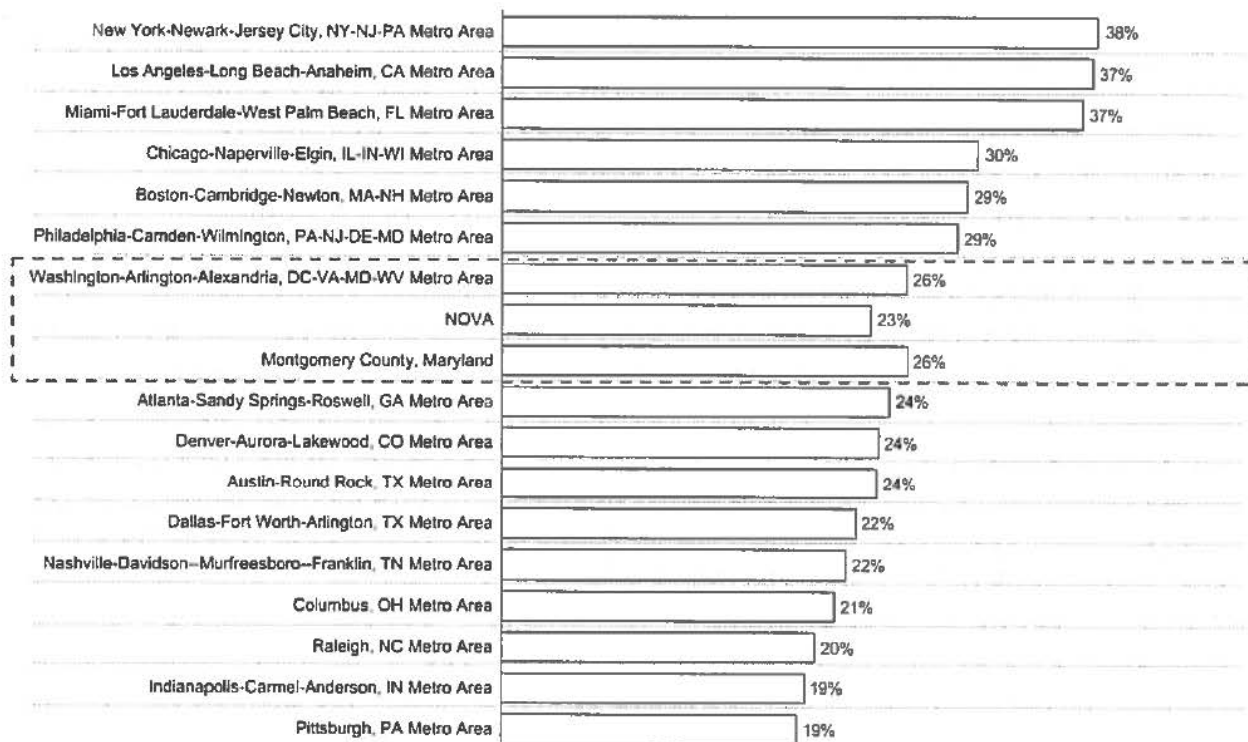
Rental units				
	Alexandria	Arlington	Fairfax	Loudoun
Available units				
Studio	4,694	5,595	5,679	2,116
1 bedroom	16,091	25,699	32,647	3,448
2 bedrooms	13,584	16,654	44,266	6,873
Average rent				
Studio	$1,231	$1,467	$1,232	$1,204
1 bedroom	$1,334	$1,687	$1,400	$1,256
2 bedrooms	$1,678	$2,041	$1,606	$1,644

Source: American Community Survey, 2016 1-year estimates

In summary, the Greater D.C. housing market is diverse, growing, and is addressing address affordable housing challenges.

The region remains more affordable to a larger share of people than in most other major metros. Across the region, only 26% of households pay more than 30% of their monthly income on housing. If you locate in our community, we'll partner with you to ensure our housing supply, planning and approval processes, and affordability strategies continue our region's legacy of keeping pace with demand while remaining a community accessible to all residents.

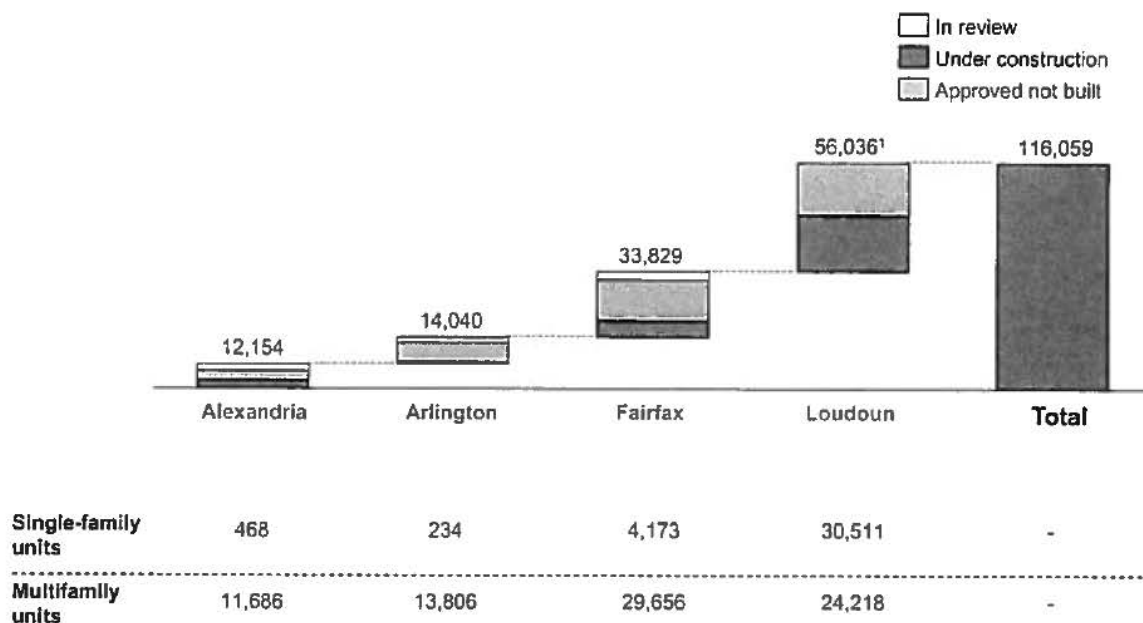**Households paying over 30% of Income to rent or mortgage**

Metro Area	%
New York-Newark-Jersey City, NY-NJ-PA Metro Area	38%
Los Angeles-Long Beach-Anaheim, CA Metro Area	37%
Miami-Fort Lauderdale-West Palm Beach, FL Metro Area	37%
Chicago-Naperville-Elgin, IL-IN-WI Metro Area	30%
Boston-Cambridge-Newton, MA-NH Metro Area	29%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metro Area	29%
Washington-Arlington-Alexandria, DC-VA-MD-WV Metro Area	26%
NOVA	23%
Montgomery County, Maryland	26%
Atlanta-Sandy Springs-Roswell, GA Metro Area	24%
Denver-Aurora-Lakewood, CO Metro Area	24%
Austin-Round Rock, TX Metro Area	24%
Dallas-Fort Worth-Arlington, TX Metro Area	22%
Nashville-Davidson--Murfreesboro--Franklin, TN Metro Area	22%
Columbus, OH Metro Area	21%
Raleigh, NC Metro Area	20%
Indianapolis-Carmel-Anderson, IN Metro Area	19%
Pittsburgh, PA Metro Area	19%

Source American Community Survey

The Greater D.C. region has shown a remarkable ability to absorb its growing population, rapidly expanding its housing units over the last decade.

In less than 10 years, the region has more than doubled the number of housing units from 2.3M to 4.7M, with NOVA accounting for two-thirds of this growth. As discussed previously, this buildout has had the beneficial effect of holding rent growth at some of the lowest levels among all Top 20 peers.

in the future, Northern Virginia's localities expect over 115,000 new units (homes and apartments) to come online in the next few years. Nearly 15% (~18,000 units) of these planned units are already under construction; about half of the units (~60,000 units) have been approved; and the remainder (34%, ~40,000) are currently under review. This expansion of the housing stock varies in type, style, and location, increasing the options available to Northern Virginia residents.

Planned developments by region and select examples (details in appendix)
Thousands of units

	Alexandria	Arlington	Fairfax	Loudoun	Total
Single-family units	468	234	4,173	30,511	-
Multifamily units	11,686	13,806	29,656	24,218	-

1 Loudoun's figure combines "under construction" and "approved not built" into one category (data listed as "units built or permitted")
Source: Fairfax County Department of Management and Budget, Loudoun County Department of Planning and Zoning (as of October 5, 2017); Arlington County Planning Development; Alexandria county files

The Greater D.C. region is finding modern ways to meet changing tenant preferences, creating opportunities for owners and communities to rethink what is the highest and best use for older office stock.

As the workforce trends younger, the region is focusing on what the market demands: activated neighborhoods, access to transit, amenity-rich environments, and modern office settings. Localities across the region are rethinking their land and building-use policies, finding innovative ways to reuse office spaces to meet housing needs and preferences.

Two examples stand out:

In Alexandria, e-Lofts converted a vacant 240,000-sqft office building into 200 loft apartments that can be configured as apartments, offices, or live/work spaces.

In National Landing, WeWork/WeLive took 164,000 square feet of vacant office space to create their first co-working/co-living facility in the Greater Washington area.

These successful examples represent the innovative approaches NOVA jurisdictions are taking to repurpose aging assets and breathe new life into neighborhoods while adding spaces that fill residential and public needs.
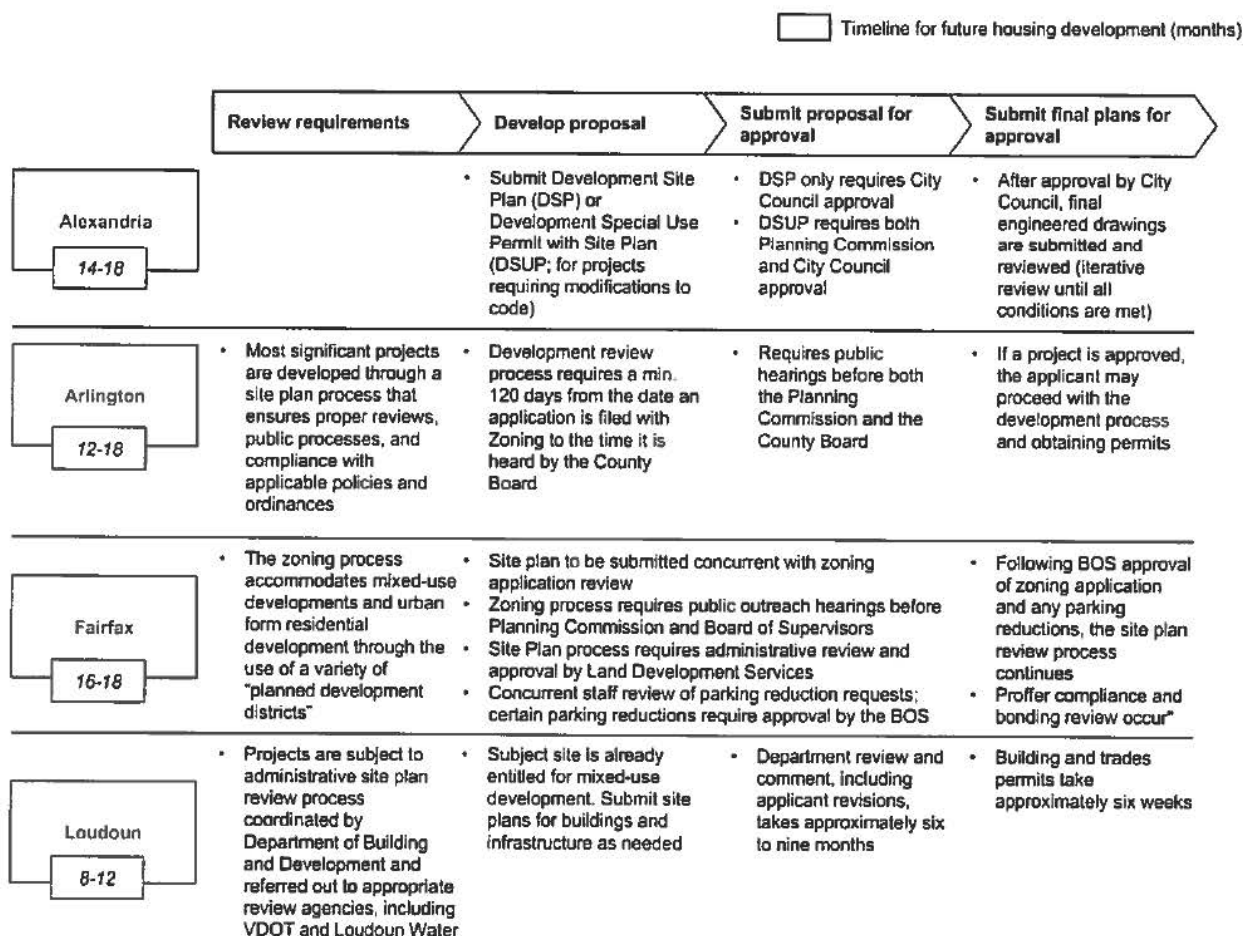
Northern Virginia's localities, and the broader D.C. region, remain committed to meeting the housing needs of their growing population by executing smart and sustainable development policies and plans.

Though each locality has designed their own specific zoning and permitting processes, all share similar themes:
- Pro-growth policies and processes based on smart, sustainable, transit-friendly strategies.
- Streamlined permitting processes averaging 12-18 months from start to finish.
- A general philosophy of being open to innovative strategies to meet housing challenges associated with growth.
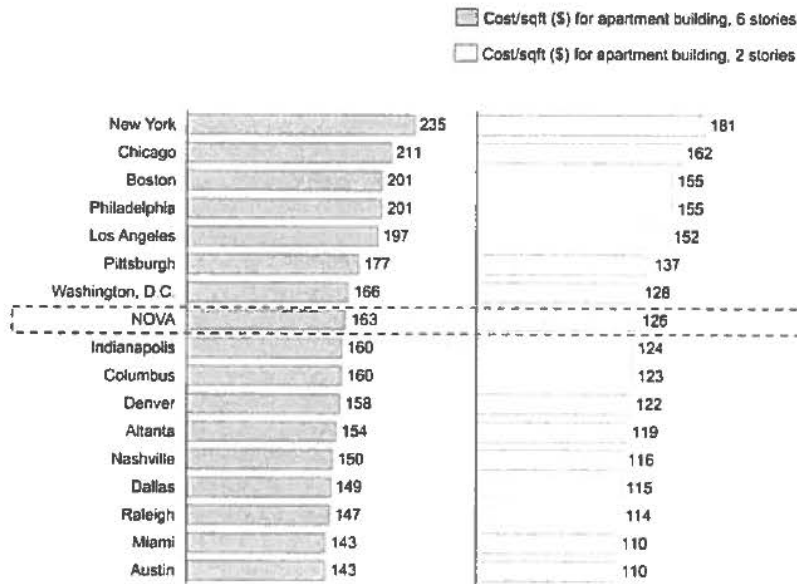
An overview of each locality's zoning requirements, permitting requirements, and timelines follows. Additional details can be found in the Real Estate section.

Timeline for future housing development (months)

	Review requirements	Develop proposal	Submit proposal for approval	Submit final plans for approval
Alexandria 14-18		Submit Development Site Plan (DSP) or Development Special Use Permit with Site Plan (DSUP; for projects requiring modifications to code)	DSP only requires City Council approval DSUP requires both Planning Commission and City Council approval	After approval by City Council, final engineered drawings are submitted and reviewed (iterative review until all conditions are met)
Arlington 12-18	Most significant projects are developed through a site plan process that ensures proper reviews, public processes, and compliance with applicable policies and ordinances	Development review process requires a min. 120 days from the date an application is filed with Zoning to the time it is heard by the County Board	Requires public hearings before both the Planning Commission and the County Board	If a project is approved, the applicant may proceed with the development process and obtaining permits
Fairfax 16-18	The zoning process accommodates mixed-use developments and urban form residential development through the use of a variety of "planned development districts"	Site plan to be submitted concurrent with zoning application review Zoning process requires public outreach hearings before Planning Commission and Board of Supervisors Site Plan process requires administrative review and approval by Land Development Services Concurrent staff review of parking reduction requests; certain parking reductions require approval by the BOS		Following BOS approval of zoning application and any parking reductions, the site plan review process continues Proffer compliance and bonding review occur"
Loudoun 8-12	Projects are subject to administrative site plan review process coordinated by Department of Building and Development and referred out to appropriate review agencies, including VDOT and Loudoun Water	Subject site is already entitled for mixed-use development. Submit site plans for buildings and infrastructure as needed	Department review and comment, including applicant revisions, takes approximately six to nine months	Building and trades permits take approximately six weeks

Source American Community Survey

NOVA has the ability to absorb rapid population influx.

Unlike many of its peers, Northern Virginia's space, pro-growth zoning and permitting processes, and attractive construction economics support a robust outlook on the future housing stock. For instance, NOVA's construction costs to build an apartment or single-family home look more like its smaller city peers than its similarly-sized peers. Altogether, the space, permitting, and economics are already present to meet the housing needs of Amazon's employees.

Cost/sqft ($) for apartment building, 6 stories
Cost/sqft ($) for apartment building, 2 stories

City	6 stories	2 stories
New York	235	181
Chicago	211	162
Boston	201	155
Philadelphia	201	155
Los Angeles	197	152
Pittsburgh	177	137
Washington, D.C.	166	128
NOVA	163	126
Indianapolis	160	124
Columbus	160	123
Denver	158	122
Atlanta	154	119
Nashville	150	116
Dallas	149	115
Raleigh	147	114
Miami	143	110
Austin	143	110

Source: RS Means

Furthermore, NOVA's housing authorities are already planning for rapid growth in the housing stock, especially of multifamily units, to accommodate changing preferences for decades to come.

Forecasted housing units
Thousands of units; annual growth rate (bubble)

Traditional single-family homes
Attached single-family homes (e.g., townhomes)
Multi-family units (apartments and condos)
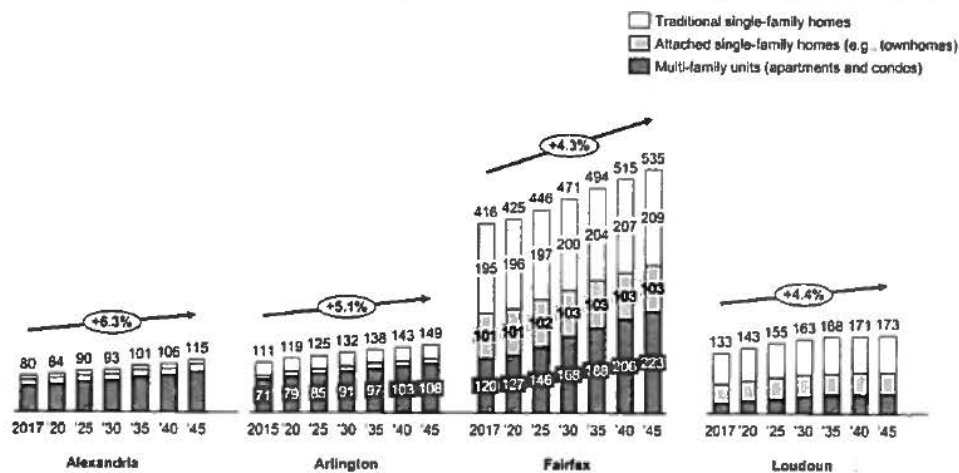
Source: Fairfax County Department of Management and Budget, 1990 through 2045. Integrated Parcel Lifecycle System (IPLS) 2017. Local housing authorities

Ensuring everyone can call NOVA home.

Northern Virginia's localities share a core commitment to ensuring people from all backgrounds, economic situations, and occupations can afford to live, grow, and thrive in our community.

On a regional level, the Virginia Housing Development Authority (VHDA), an independent, self-supporting state housing finance agency, is the leading provider of mortgage capital and development subsidies for affordable rental housing and first-time home purchases in the four NOVA localities. VHDA maintains close working relationships with local stakeholders to maximize the services it provides to the region and collaborates in the development of solutions to local housing challenges. VHDA's partners include local government housing departments, local housing authorities, non-profit, and for-profit developers of affordable housing, local lenders, realtors and homebuilders, and a wide array of other affordable housing stakeholders.

VHDA regional efforts make an impact.

VHDA has made increased affordable housing assistance in Northern Virginia (NOVA) a programmatic priority for the last decade. VHDA has established a Northern Virginia Advisory Council composed of local government, non-profit, and business partners to help guide the development of new mortgage financing and subsidy assistance programs, services, and strategies to address the affordable housing challenges of the region. VHDA has hired outreach associates who reside in the region in order to strengthen its capacity to build and sustain close collaborative relationships with affordable housing delivery partners and stakeholders.

Core rental programs include:
- **Loans:** VHDA provides construction and permanent mortgage financing to developers of affordable rental housing.

- **REACH mortgage interest rate buy-downs:** VHDA currently allocates 40% of its net earnings to support REACH housing subsidy programs. The REACH allocation for FY 2018 is $51.8 million.

- **Low-income housing tax credits (LIHTCs):** VHDA is Virginia's administrating agency for the Low-Income Housing Tax Credit Program, which is the primary federal source of capital subsidies supporting the development of affordable rental housing.

Home purchase assistance programs include:
- **Mortgage loans:** All VHDA home purchase programs offer 30-year, fixed-rate terms with features aimed at meeting specific homebuyer needs. VHDA provides programs that require no down payment and allow for lower credit scores.

- **Down payment assistance:** All VHDA borrowers can access down payment assistance loans. VHDA also provides down payment grants of up to 2.5% of purchase price, requiring no repayment to income qualified borrowers

- **Mortgage credit certificates (MCCs):** A Mortgage Credit Certificate (MCC) from VHDA could save first-time homebuyers thousands of dollars by reducing the amount of federal income tax owed.

NOVA's localities are also embedding affordable housing strategies in their planning efforts.

Alexandria

Alexandria's 2013 Housing Master Plan (HMP) provides a range of financial, land use, and zoning tools to amplify the City's efforts to produce and preserve affordable units. The City will make public land available for affordable housing, offer predevelopment loans to facilitate non-profit-sponsored projects, and adapt zoning laws to allow for additional density for affordable housing, among other actions.

Arlington

Arlington's recently established Housing Conservation Districts will encourage the retention and renovation of existing rental affordable housing units and provide opportunities for the creation of new affordable units. A second phase of work related to this District is currently underway, creating zoning and land use incentives to achieve the District goals.

Fairfax County

Fairfax's Affordable Dwelling Unit (ADU) Program allows for adjustments to density requirements based on the type of unit being constructed. Flexible Zoning Ordinance provisions for ADU developments include alternative unit types and reduced minimum yard and lot size requirements. The Workforce Housing initiative encourages the development of more affordable housing in the County's high-density, mixed-use centers. These units are typically smaller than market rate units and target households with incomes above those required by the ADU program. Program is under Zoning Ordinance and will contain provisions regarding the production, control, and administration of proffered Workforce Housing units.
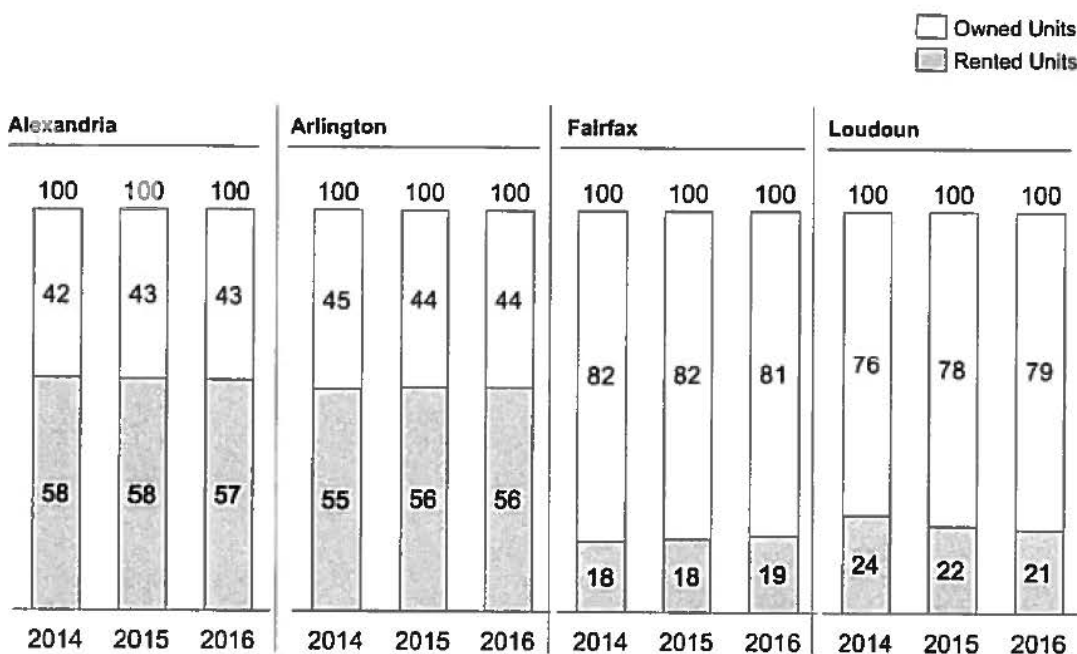
Loudoun County

Affordable housing strategies are embedded across the County's Comprehensive Plan, Zoning Ordinance, and Economic Development Strategic Plan. Tactics include tools to incentivize and accelerate construction of housing eligible for workforce density bonuses, the use of a Housing Trust Fund for financial assistance programs, and allowances for manufactured housing, accessory units, and other alternative housing types in multiple zoning districts.

By locating in Northern Virginia, Amazonians will have a wealth of housing options from which to choose based on their preferences.

Ranging from majority-rental locales in urban Alexandria and Arlington to predominantly owner-occupied residences in Fairfax and Loudoun (with an increasing number of rental units available in mixed-use neighborhoods), your employees will find a tight-knit, welcoming, and diverse neighborhood no matter where they choose to live.

☐ Owned Units
▨ Rented Units

Alexandria			Arlington			Fairfax			Loudoun		
100	100	100	100	100	100	100	100	100	100	100	100
42	43	43	45	44	44	82	82	81	76	78	79
58	58	57	55	56	56	18	18	19	24	22	21
2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016

Source: American Community Survey, 2012-2016 5-year estimates

Pick a housing type and location.
Keep the connectivity.
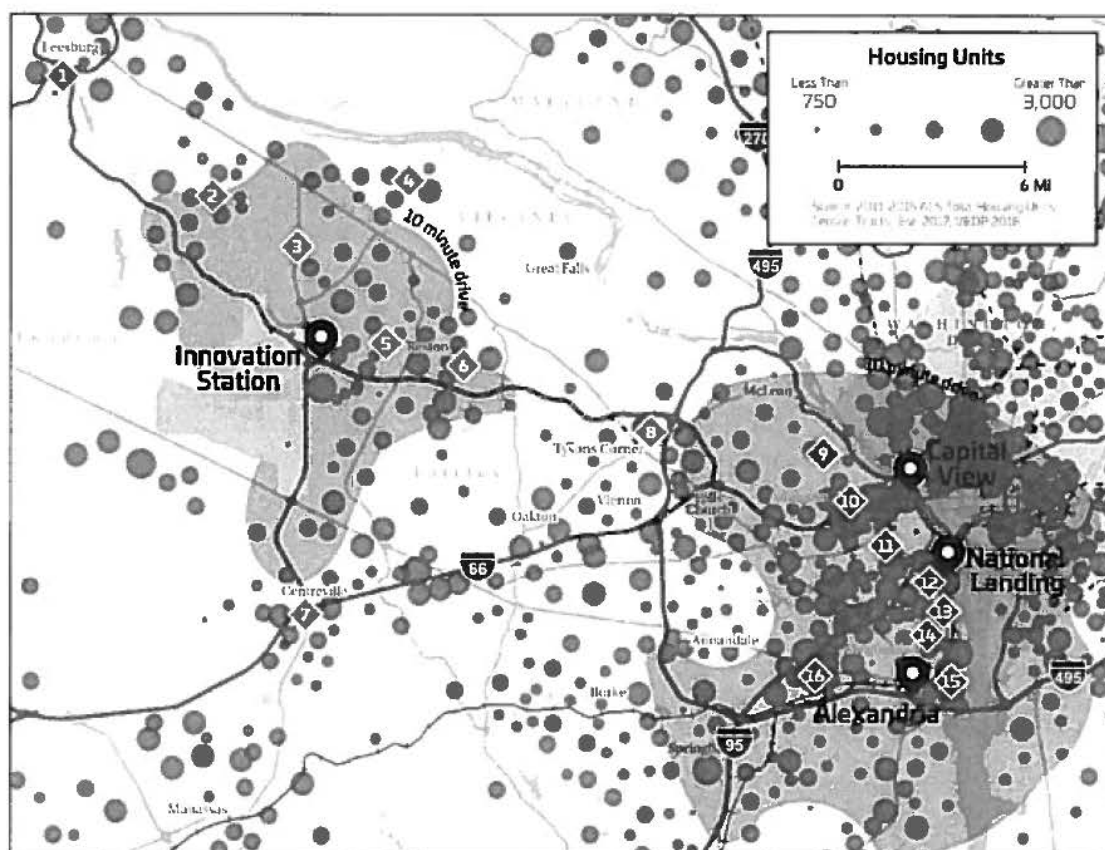
Loudoun
1 Leesburg
2 Ashburn
3 Sterling
4 Potomac Falls/Cascades

Fairfax
5 Herndon
6 Reston
7 Centreville
8 Tysons Corner

Arlington
9 North Arlington
10 Rosslyn-Ballston Corridor
11 Columbia Pike
12 Crystal Cirty/Pentagon City

Alexandria
13 Del Ray
14 Potomac Yard
15 Old Town
16 West End

Bringing innovation to housing.

NOVA's various actors within the housing ecosystem have partnered to deliver truly innovative solutions to meet the community's need for affordable housing.

For instance, Fairfax County's Public Private Educational Facilities Infrastructure Act has been leveraged by private and non-profit developers to finance affordable housing communities at little to no cost to the County, often by leveraging public assets such as land. Arlington County has also partnered with organizations such as the Arlington Partnership for Affordable Housing (APAH) and AHC, Inc. to make low-cost loans to affordable housing developers for the production and preservation of affordable housing. Among other strategies, Alexandria provides direct technical assistance to employers by developing Employer Assisted Housing programs, encouraging and supporting employers to play a critical role in the development of affordable housing strategies. Example affordable housing partnerships include:

Gilliam Place is a mixed-use development that provides 172 affordable rental units on a site previously home to Arlington Presbyterian Church (APC). APC worked with APAH to ensure the project would benefit the local community.

The First Baptist Church of Clarendon, in partnership with APAH, used a condominium financing structure to transform an outdated church property. They built 116 affordable rental units that sit atop the existing and still-operational church building, retaining the main entrance with its tall columns and steeple. The development, **vPoint Apartments**, is adjacent to the Clarendon Metro station and includes 10 units of permanent supportive housing.

The Residences at Government Center is a 270-unit affordable rental development constructed on the Fairfax County Government Center campus. In addition to the creative use of County land, the development was the first in Virginia to use an innovative hybrid financial structure combining 4% and 9% Low-Income Housing Tax Credits. The project was a partnership of the County, its housing authority, the Jefferson Apartments Group, and SCG Development. The National Council for Public-Private Partnerships selected the Residences for its 2017 Outstanding Project Innovation Award.

Good Works LLC and Toll Brothers developed the **Regency at Belmont Chase** with financing from Virginia Housing Development Authority. The development includes 100 affordable housing units for households at 30-60% AMI (out of 450 multifamily residences). Originally slated as a single-use, high-quality office park in a suburban Loudoun County, real estate trends continue to evolve, shifting development towards more integrated commercial, retail, and residential mixed usage.

Project pipeline

Church of the Resurrection/APAH	The Episcopal Church of the Resurrection and APAH are partnering to develop a mixed-use building with 114 affordable rental units and a 5,000-sq. ft. church (140-seat chapel) in Alexandria. Development funding will include Low-Income Housing Tax Credits, a low-interest City loan of up to $9 million to APAH, and other sources.
St. James Plaza	Land owned by St. James United Methodist Church and the Bi-District Office of the NOVA Methodist Church is the intended site of 93 affordable rental units. The site is across from NOVA Community College's Alexandria Center and a quarter mile from the Mark Center (location for the Washington Headquarters Services of the United States Department of Defense).
American Legion – Arlington Partnership for Affordable Housing	American Legion Post #139 and APAH are partnering to develop between 110 and 160 affordable rental units on land owned by the Post. Veterans will be provided preference for a portion of the units. The project will provide a stronger financial footing and program space for the Post and the veterans it serves, and the redevelopment of an aging property close to quality transit and amenities.

A1.e. Inclusion – An inclusive workplace and community are key to Amazon. Provide data on the median earnings, unemployment, home ownership, educational attainment, and undergrad enrollment gaps for underrepresented minorities in your community. Please further provide data on hate crimes committed in your community.

NOVA strives to ensure every person is excited to call the region home.

As one of the country's most diverse regions, people of all races, ethnicities, sexual orientations, and abilities (among others) thrive. Despite being one of the most upwardly mobile communities for children born into poverty, we have room to grow.

Inclusion

Category	Total	African-American	Hispanic or Latino	Asian	American Indian and Alaskan Native	Native Hawaiian and Other Pacific Islander	Two or More Races
Population	4,760,928	1,209,721	641,702	475,031	14,618	3,093	134,743
Share of population	100%	25%	13%	10%	0%	0%	3%
Median earnings	$50,848	$40,242	$28,220	$50,842	$34,529	$41,664	$39,570
Unemployment	6%	10%	6%	5%	6%	3%	8%
Home ownership	62%	50%	47%	68%	52%	42%	55%
Educational attainment							
HS graduate or higher	90%	91%	66%	91%	81%	89%	91%
Bachelor's degree or higher	49%	33%	24%	63%	29%	34%	50%
Undergraduate enrollment gaps	7%	9%	8%	8%	11%	13%	12%

Notes: Data is for the Washington-Arlington-Alexandria, DC-VA-MD-WV MSA, Population: 16 years and older; Home ownership: share of residences owner-occupied; undergraduate enrollment: share of 16-year old+ population enrolled

Sources: US Census, American Community Survey

While hate crimes are up about five percent nationally, the number of hate crimes in Virginia decreased about 12 percent, according to the FBI's 2016 hate crime statistics. For Northern Virginia localities, hate crimes overall were also down in the region.

Hate crimes by type (count)

Locality	Race/ Ethnicity/ Ancestry	Religion	Sexual orientation	Disability	Gender	Gender Identity	Total
Arlington County	2	2	0	0	0	0	4
Alexandria	0	0	2	0	0	0	2
Fairfax County	14	7	5	0	0	0	26
Loudoun County	5	1	2	0	0	0	8
Northern Virginia	21	10	9	0	0	0	40

Source: FBI, Uniform Crime Report 2016, Table 13, Hate Crime Incidents

Get in the game.

Hundreds of thousands of kids and adults participate in sports leagues and clubs across NOVA.

For those who want to get in the game, organized offerings include everything from volleyball and kickball to fencing and wood bat baseball.

Kids
- Aussie Rules Football
- Baseball
- Basketball
- Bowling
- Cheer
- Fencing
- Flag Football
- Football
- Gymnastics
- Ice Skating
- Lacrosse
- Martial Arts
- Paddle Sports
- Rugby
- Soccer
- Softball
- Swimming
- Tennis
- Ultimate Frisbee

Adults
- Badminton
- Baseball
- Wood Bat Baseball
- Ball Hockey
- Basketball
- Beach Volleyball
- Billiards
- Bowling
- Bocce
- Cricket
- Croquet
- Cornhole
- Dodgeball
- Golf
- Fencing
- Flag Football
- Flip Cup
- Hockey
- Indoor Volleyball
- Kickball
- Darts
- Lacrosse
- Martial Arts
- Rugby
- Pickleball
- Ultimate Frisbee
- Senior Softball
- Shuffleboard
- Skeeball
- Soccer
- Softball
- Swimming
- Tennis

Get your kicks on the course with FootGolf

... the newest sport sweeping the nation. This hybrid between golf and soccer is a fun and affordable game, perfect for families and a great way to introduce a new audience to the golf course. Come enjoy the first American FootGolf League-certified course in Fairfax County at Pinecrest Golf Course. The par 60 course is 1,965 yards with 18 holes.

Loudoun County Cricket League

is organized by Loudoun County Parks and Recreation as part of an adult recreation program. Loudoun has a huge community of cricket loving fans from South Asia including India, Pakistan, Bangladesh and Sri Lanka. The cricket league was started in 2009 with just 5 teams and quickly grew to 48 teams in late 2015. As of 2017 the league has 1,200+ players.

2009   5

2015   48

For avid walkers and runners who like to pound the pavement, NOVA offers fun runs and races throughout the year.

START

Run Your Heart Out 5k Feb 11, 2018 Fairfax	**Reston Ten Miler** March 4, 2018 Reston	**Lucky Leprechaun 5k** March 17, 2018 Reston	**Bluemont Shamrock 5k & 10k** March 17, 2018 Bluemont	**Old Hickory Golf Club St. Patty's 5k** March 17, 2018 Woodbridge	**Augustine Golf Club Easter 5k** March 31, 2018 Stafford
LHMS PTA Panther Pride 5k April 7, 2018 Reston	**Runners Marathon of Reston** April 8, 2018 Reston	**Wolftrap Elementary 5k & Fun Run** April 8, 2018 Vienna	**Arlington Bunny Hop 5k** April 14, 2018 Arlington	**Heroes & Villians Run for Justice 5k** April 15, 2018 Fairfax	**Loudoun Half 8k/Fun Run & the Loco Challenge** April 21- 22, 2018 Ashburn
Healthy Strides Community 5k & 10k April 21, 2018 Burke Lake	**Every Heart Counts 5k** April 22, 2018 Fairfax	**Draft Day Dash 2018 Redskins 5k** April 28, 2018 Landover	**Waterford Trail 5k & Fun Run** April 28, 2018 Waterford	**Palio Di Diena 5k** April 28, 2018 Great Falls	**Oak Hill 5k** May 5, 2018 Oak Hill
Ashburn Village Fiesta 5k/10k/ Fun Run May 5, 2018 Ashburn	**Loudoun Lyme 5k/10k & 1k Fun Run** May 6, 2018 Brambleton	**Hopecam 5k** May 6, 2018 Reston	**Adam's Angels 5k** May 12, 2018 Fairfax	**Mother's Day 4 Miler** May 13, 2018 Reston	**Bull Run Gold Club Mother's Day 5k** May 13, 2018 Haymarket
Sterling Strong 5k May 19, 2018 Sterling	**Superhero 5k** May 20, 2018 Leesburg	**Melanomore 5k & Fun Run** May 20, 2018 Sterling	**Celebrate Simple Joys 5k & Fun Run** May 20, 2018 Fairfax	**Ringing in Hope a Salute to Our Troops** May 28, 2018 Ashburn	**Race4Respect 5k** June 2, 2018 Washington DC
Celebrate Fairfax 5k June 10, 2018 Fairfax	**Run with DAD 5k** June 17, 2018 Reston	**Loudoun Soccer Fox Trot Father's Day 5k** June 17, 2018 Leesburg	**Freedom 5k** July 1, 2018 Fairfax	**Firecracker for the Troops 5k** July 4, 2018 Reston	**Potomac River Running's Birthday Bash 5k** July 22, 2018 Fairfax
Leesburg 20k/5k Aug 19, 2018 Leesburg	**South Lakes 10k** Aug 26, 2018 Reston	**Great American 5k** Sept 3, 2018 Fairfax	**Susco 8k & 2k Walk** Sept 15, 2018 Reston	**Perfect 10 10k** Sept 30, 2018 Reston	**Glory Days Grill XC5k** Oct 6, 2018 Centerville

FINISH

		Monster Mash Dash 5k Oct 28, 2018 McLean	**Marine Corps Marathon** Oct 28, 2018 Arlington	**Fidelity Investments Parks 10k** Nov 4, 2018 Washington DC	**Dominion Consulting Veterans Day 5k** Nov 11, 2018 Fairfax

NOVA has great outdoors.

Number of Playgrounds

220
129
36
18

Number of Athletic Fields

779
200
49
96

Number of Parks

144   27
425
+ 5 nature centers
105

Miles of Bike Lanes & Trails

60
57
52
300

Acreage of Parks/Publice Space

2,280
1,200
1,700
23,000

KEY

■ Alexandria
■ Arlington
■ Fairfax
■ Loudoun

Each color represents the analogous listed location compared in this KEY.

More than 700 parks across NOVA means there's something for everyone.

Innovation Station

Capital View

National Landing

Alexandria

1 Morven Park, a nonprofit foundation park, is a 1,000-acre historic estate and equestrian center that invites the public to attend events, take a tour, play on the fields, have a picnic, hike a trail or ride their horse every season. Events include equestrian competitions, festivals and hands-on learning programs. In 2017, Morven Park began the Polo in the Park event where arena polo matches, picnicking and dancing take place on Saturday nights in June, July, and August.

2 Situated on the scenic Potomac River in Sterling Virginia, Algonkian Regional Park is the perfect place for an afternoon of fun in the sun, golf, waterpark fun, a family vacation or retreat, a meeting, or your wedding. The par 72 golf course's front nine tree-lined fairways are long, straight and flat while the back nine features hills and several dogleg and water holes. Other golf features include a putting green, driving range, clubhouse, full-service pro-shop, and Algonkian Grill. The park also offers twelve fully-equipped riverfront vacation cottages, miniature golf, boat/rv storage and ramp, picnic shelters, picnic tables and nature trails. Located within Algonkian Park, Volcano Island Waterpark offers guests a great way to cool off on those hot summer days.

3 Great Falls National Park, the Potomac River builds up speed and force as it falls over a series of steep, jagged rocks and flows through the narrow Mather Gorge. The beautiful 800-acre park has many opportunities to explore history and nature. You can experience whitewater boating with the use of whitewater kayaks and canoes. The section of the Potomac River flowing through the park varies from Class II (moderately easy) to Class VI (extreme). You can also get your thrill at climbing sites with routes ranging in length from 25 to 75 feet and difficulty ranges from 5.0 up to the highest rated climbs at 5.14.

4 Clemyjontri Park in McLean features a unique playground where children of all abilities can play side-by-side. It is a playground where every child is welcome, a place where children who use wheelchairs, walkers or braces, or who have sensory or developmental disabilities, can have a parallel playground experience of fun and exploration. Virginia's First Liberty Swing allows wheelchair users the experience of swinging without having to transfer from their wheelchair.

5 The new and improved Lubber Run Community Center will be up to four stories and will include a gymnasium, underground parking, and a continuation of the DPR pre-school at the site. In addition, the new Community Center will house a robust senior program, a 2,000sf. fitness center, multi-purpose rooms to support DPR programming and summer camp activities, and a fully renovated 9,000sf playground. In addition to the new building amenities and playground, the site will be enhanced with over 30,000sf of new green open space for community enjoyment on top of the structure parking on site, and two new multipurpose courts to be used for basketball, pickleball, and general play.

6 Conveniently located near National Landing, the Long Bridge Park and Aquatic, Health & Fitness Facility offers its visitors convenient locations for train, plane, and bird watching, accompanied by world-class athletic facilities and play areas for children. With over 40 acres of recreation and open space, Long Bridge Park is a distinctive showplace of environmentally sound park development, featuring high-quality sports and recreation facilities. The park features an environmentally remediated site that turned a brown field into a park; including three full-size, multi-sport, lighted, synthetic turf fields; a network of walkways; an overlook with views of capital monuments; a playground area; public art, a rain garden, and comfort facilities. The facility will feature a 50-meter pool with nearly 500 seats, a combination play and teaching pool, approximately 10,000sf of health & fitness space, and community rooms.

NOVA parks offer year-round programming and fun for people of all ages and lifestyles.

Waterfront activities, sports leagues, festivals, movie nights, and community gardens abound in beautiful outdoor settings. These are just a few.

The Fairfax County Park Authority is the largest provider of camps for children in Northern Virginia. Individual camps focus on a myriad of topics, including science, computer technology, aquatics, boating, fishing, arts and crafts, the performing arts, and even how to be a farm hand.

Discover your place in the universe with an astronomy program at the roll-top observatory at Turner Farm in Great Falls. Observatory Park offers programs on a variety of astronomical subjects, including planets, comets, open clusters, double stars, stellar color spectrum, globular clusters, galaxies, and nebulae. See the night sky from one of Fairfax County's darkest spots through permanently mounted telescopes.

Wine and Ride Trail Ride is one of the many activities that Loudoun County Equine Alliance hosts each year. In conjunction with the Loudoun County Farm Tour weekend, riders start at Temple Hall Farm, a regional park, and end at Fabbioli Vineyards.

The beauty of the Chapman DeMary Trail encourages exploration and recreation in the outdoors and emphasizes stewardship in everyday activities. The trail is supported by The Nature Generation, Loudoun Valley High School, the Piedmont Environmental Council, and the Town of Purcellville. The trail partners offer 12 to 15 free organized events and activities throughout the year to many generations. Trail walks are led by local experts on topics such as local birds, wildflowers, pollinators, and trees on the trail. Additionally, 11th and 12th-graders attending Loudoun Valley High School use the trail as a classroom for portions of their Environmental Explorations science class.

Arlington Mill Community Center, located near National Landing, boasts a high-school-sized gymnasium, fitness center, a congregate meal program for senior citizens, a head-start program, and the Project Family Community Outreach Program which helps children prepare for pre-school or Kindergarten. Aspire! will add to this vibrant offering by providing after-school programming, including their flagship program, Learning Rocks!

Phoenix Bikes, a homegrown Arlington non-profit, strives to provide education to Arlington's youth through bicycle education, while promoting community and building "sweet" bikes. Phoenix Bikes operates under five core values, including: opportunity and social justice, sustainability, collaboration, spirit, and grit. Aside from supporting youth and building community, Phoenix Bikes is a fully-functional bike shop that provides affordable, refurbished bikes to the community with the largest selection of both used bicycles and used bike parts in the D.C. metro area. They specialize in tune-ups and complete custom builds of bicycles.

The Washington, D.C. Bocce League hosts a division in Alexandria that competes weekly. Held at a park near the Braddock Road Metro station, the league brings in players from around the City and the surrounding area to play bocce and socialize at one of the adjacent restaurants. The bocce program, similar to other active programs around the city, is managed through a partnership between the local community association and the City recreation department.

Every week during the warmer months, Alexandrians of all ages enjoy outdoor movie nights across the City. Recreation centers and parks host family-friendly evenings complete with games and snacks for kids. For adults, the movie series in Carlyle is often accompanied by local food trucks in the neighborhood's central park.

...although you're not working for the weekend.

In NOVA, Amazonians are never far from the action, with access to the country's most interesting cultural and historic sites, sports teams in all major leagues, a vibrant food and wine scene, and an active nightlife and café culture.

We are home to a broad range of outdoor activities, from kayaking on the Potomac to hiking in the nearby Shenandoah National Park, all as part of our mild four-season climate.

Though you probably won't want to leave, getting away for a quick trip to New York or the beaches along the Mid-Atlantic could not be easier.

"There is a vibrant work-life balance that only this area can offer – close to Washington, D.C., along with wonderful parks, hiking trails, mountains, and the beach all within close proximity. It's an attractive place to live, learn, and enrich a professional career. My team and I could never have been as successful in any other location."

- **Jeff White**
  CEO
  Gravy Analytics

Game on.
If sitting on the sidelines suits you best, the region plays host to professional sports teams in all major leagues, offering year-round opportunities to root for the home team.

Day and weekend trip options are plentiful—
no matter what you're into.

ACTIVITIES KEY

- Family Fun
- Foodies
- History Buffs
- Museums
- Nature Lovers
- Sports Enthusiasts
- Sun Worshipers
- Weekend Warriors
- Wine & Beer Lovers
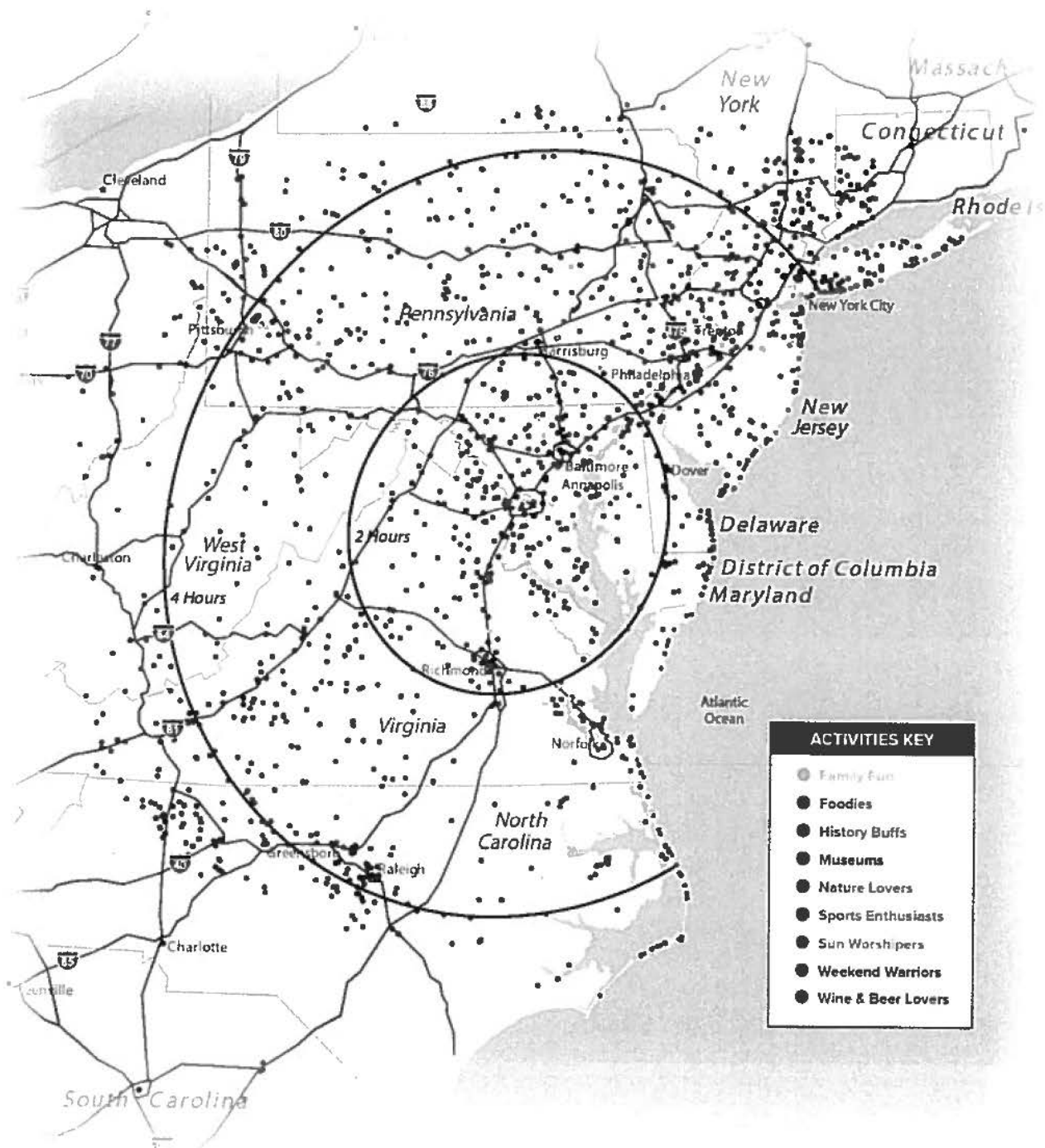
Food, wine, and beer enthusiasts can find their fill.

Amazonians won't have to travel very far. Loudoun is home to a renowned wine trail with close to **50 wineries**, more than any other county in Virginia. Additionally, Loudoun's craft beer industry has exploded in the last three years, with more than **28 breweries** located along the LoCo Ale Trail. Loudoun has a "bud to brew" capacity, where all the ingredients can be grown and processed in the county.
(In NOVA)

Sakura Matsuri Japanese Street Festival

The **Sakura Matsuri Japanese Street Festival** is a major event of the National Cherry Blossom Festival in Washington, D.C. It is the biggest Japanese street party in the nation and includes a huge Japanese Culinary Arts Pavilion.
(Across the river from NOVA)

LoCo Ale Trail (Welsh Brewery)

The Eastern Shore's 13 wineries that comprise the **Chesapeake Wine Trail** make for a perfect excursion when you're on your way to the beach.
(2 hours from NOVA)

Chesapeake Wine Trail (Vault Field Vineyards)

For four days each fall at the **New York City Wine and Food Festival**, culinary giants, celebrity chefs, mixologists, vintners, and foodies unite to eat, drink, and end world hunger.
(4 hours from NOVA)

NYC Wine and Food Festival

History buffs have endless opportunities to explore.

The **Smithsonian** is our suburb (Washington, D.C.).
(across the river from NOVA)

Smithsonian Institution, Washington D.C.

A visit to **Harpers Ferry, West Virginia**, a quaint, historic community at the confluence of the Potomac and Shenandoah rivers, is like stepping into the past. Stroll the picturesque streets, visit exhibits and museums, or hike trails and battlefields. Spend a day or a weekend.
(1 hour from NOVA)

Harpers Ferry, WV

Valley Forge National Historical Park in King of Prussia, Pennsylvania commemorates more than the sacrifices and perseverance of the Revolutionary War generation — it honors the ability of citizens and their leaders to pull together and overcome adversity during extraordinary times.
(3 hours from NOVA)

Valley Forge National Historical Park, PA

Art lovers will find a feast for the eyes and the soul.

The **Smithsonian Folklife Festival** in Washington, D.C., held every summer on the National Mall, celebrates several U.S. and foreign cultures each year with music, crafts, food, and demonstrations of practical skills. The festival usually takes place at the end of June and goes into July.
(Across the river from NOVA)

Smithsonian Folklife Festival, Washington D.C.

The **Barnes Foundation** in Philadelphia houses one of the finest collections of nineteenth- and twentieth-century French painting in the world. An extraordinary number of masterpieces by Renoir, Cezanne, and Matisse provide a depth of work by these artists that is unavailable elsewhere. Established as an educational institution, the Barnes carries out its mission teaching classes in its galleries and Arboretum.
(2.5 hours from NOVA)

Barnes Foundation, PA

Henry Frick once resided in the 18th-century French-style mansion known as the **Frick Museum** in New York City; now it is the home of his impressive art collection, which includes Titian, Vermeer, Rembrandt, El Greco, Goya, Whistler, and more.
(4 hours from NOVA)

Frick Museum, NY

"There's so much to do in this area that you really have the luxury of being able to pick and choose according to what your mood may be. Head down to a Nats game or check out the latest art exhibit, or there's some sort of yoga or movie in the parks, or some sort of beer festival or food festival."

- **Giovanna Garcia**
  Arlington Resident

The Mid-Atlantic is a nature lover's playground.

The **National Arboretum** occupies 415 acres on the west bank of the Anacostia River. Among the more than 7,000 kinds of plants are special collections of camellias, hollies, apple trees, and slow-growing conifers.
(across the river from NOVA)

National Arboretum, Washington D.C.

With 20 outdoor gardens and 20 indoor, heated greenhouses, plus meadows, fountains, and over 11,000 different types of plants, **Longwood Gardens** in Kennett Square, Pennsylvania will occupy a full day of exploring.
(2.5 hours from NOVA)

Longwood Gardens, PA

At **Cranesville Subarctic Swamp** in Oakland, Maryland, discover a small piece of forest and bog that remained after the Ice Age and is home to unique species of plants and animals. A boardwalk crosses the swamp and six trails wind through different sections.
(3 hours from NOVA)

Cranesville Subarctic Swamp, MD

Niche gives Northern Virginia high marks for its quality of life, with "A" grades in its 2017 rankings.

Outdoors	Alexandria	A
	Arlington	A
	Fairfax	B+
	Loudoun	A -

Growth | Community | Sustainability and Environment

A1.h. Describe your Community's existing and planned sustainability initiatives (such as, but not exclusive to: recycling, green business parks, incentive programs for LEED standard building, and energy efficiency programs).

You'll love living here.

A significant driver of Northern Virginia's strong performance in quality-of-life rankings stems from its natural blessings – its trails, rivers, parks. Preservation of these assets relies on residents being responsible stewards for future generations. Northern Virginia's counties have an exceptional track record for commitment to environmental responsibility and sustainability dating back decades. The region's small-scale programs, which include educating and encouraging citizens to be eco-friendlier or financing programs to assist residential owners with energy-efficient investments, have made a difference.

For instance, Alexandria increased recycling by 20% since 2009, and Fairfax County reduced per capita greenhouse gas emissions by 10% from 2005-2012 based on its Cool Climate Stabilization efforts.

Large-scale efforts are just as important (if not more so) in ensuring long-term sustainability of both Northern Virginia and our planet.

Every county has a major environmental sustainability strategy that outlines efforts at all levels of government to tackle tough problems, large and small. Alexandria's Covanta Waste-to-Energy Plant and storm water and wastewater infrastructure upgrades are significant achievements and will continue to drive tremendous environmental benefits.

Arlington was recognized in December 2017 as the first-ever Platinum-level community under the U.S. Green Building Council. This tremendous honor recognizes both its history of more than 50 years of dedication and commitment to sustainability and its future ambitions including its adoption of 2013's Community Energy Plan's goal to cut greenhouse gas emissions 75% by 2050

Our communities strive for sustainability.

Alexandria

Policies: Eco-City Alexandria is the City's holistic sustainability initiative which will be implemented via the goals in the Environmental Action Plan (EAP) 2030. Sub-elements include the City's Green Building Policy and the Waterfront Plan, which includes the City's climate change adaptation and resiliency efforts to mitigate flooding

Programs: Solarize Alexandria provides free solar site assessments, discount pricing, project financing support, and information on tax incentive options; large-scale energy conservation efforts include the Covanta Waste-to-Energy Plant and upgrades to the stormwater and wastewater infrastructure

Impact and recognition: Since 2009, the City has seen a 20% increase in recycling rates since the implementation of the Environmental Action Plan. It has also seen an increase in renewable energy capacity from 97kW to 480kW since 2009. Last, the Waste-to-Energy Plant produces enough energy from municipal trash to power ~20,000 homes.

Arlington

Polices: The County's Community Energy Plan (CEP) was adopted in 2013 with a goal to reduce greenhouse gas emissions 75% by 2050.

Programs: County's Green Building Incentive Program allows developers additional density in exchange for LEED silver certification (or higher) developments with an emphasis on energy and water efficient design/construction

Impact and recognition: In December 2017, Arlington County was named the first Platinum level community under the U.S. Green Building Council, recognizing over 50 years of commitment to sustainability

---

Fairfax County

Policies: Fairfax County has a long-standing commitment to sustainability, dating from well before its 2006 20-year Tree Action Plan and the 2004 original Environmental Vision (updated in 2017) affirming environmental stewardship as an essential and fundamental responsibility of local government. Its land use policies favor mixed-use, transit-oriented centers, as directed by the County's Sustainable Development Policy for Capital Projects.

Programs: Cool Counties Climate Stabilization Declaration established targets to reduce global warming emissions

Impact and recognition: From 2005-2012, the County saw per capita greenhouse gas emissions reduced by 10%.

Loudoun County

Policies: Loudoun's efforts extend to all levels of government, including Loudoun County Public Schools, whose Energy Efficiency and Conservation Program establishes goals, education, and technical expertise to facilitate energy conservation in County facilities

Programs: The County has launched a widespread recycling education and awareness effort facilitated by the Recycling Department, formed partnerships with developers to build sustainability through land use approvals and awards programs, and increased participation in PACE (Property Assessed Clean Energy Program), which provides a mechanism for financing energy efficiency and renewable energy improvements for residential owners to reduce energy costs with no upfront investment

Impact and recognition: Loudoun has been recognized by the National Association of Counties for its comprehensive, 30-year energy conservation roadmap

A1.i(i). Specify cost of living composite for each of 2013, 2014, 2015, 2016 and 2017, if available (ACCRA/COLI).

High-quality living with high value

The investment that Northern Virginia continues to make in its people, its schools, and its public infrastructure has created one of the most livable communities in the country. Though these investments don't come cheap, it's hard to argue the results – highly educated, livable, welcoming communities that offer everyone the opportunity to create stable, upwardly mobile, safe lives. In Northern Virginia, you truly get what you pay for, and more!

Cost of Living Composite:
Washington-Arlington-Alexandria, D.C.-VA-MD-WV MSA

2012	2013	2014	2015	2016	2017
144.7	**140.1**	**141.6**	**146.8**	**149.2**	**155.7**

Source: Council for Community and Economic Research

Growth | Community | Cost of Living

A1.i(ii). Specify the cost of a basket of goods in your community. The basket is from Whole Foods: gallon of 2% milk, loaf of whole wheat bread, and an avocado. Also, the cost of Starbucks tall coffee, movie ticket, monthly gym membership (individual) at a YMCA (if U.S.), dry cleaning of a shirt, and a gallon of gas.

What's hitting your wallet?

	Alexandria	Arlington	Fairfax	Loudoun
Gallon of 2% Milk, Loaf of Whole Wheat Bread, Avocado	$7.23	$8.43	$7.05	$7.87
Starbucks Tall Coffee	$2.15	$2.15	$2.12	$2.07
Movie Ticket	$9.14	$14.17	$13.29	$10.34
Monthly Gym Membership (Individual) at YMCA	$57.00	$59.00	$78.50	$69.50
Dry Cleaning of a Shirt	$1.95	$1.69	$2.29	$1.95
Gallon of Gas	$2.44	$2.45	$2.54	$2.66

A1.j. Describe the commuting patterns in your community as well as the commuting region, focusing on average travel times and costs (including tolls). Please address areas of frequent traffic accidents.

Northern Virginia offers a broad array of efficient, economical, convenient, and comfortable commuting options.

The region is characterized by one of America's most multimodal transportation systems, which include services such as Metrorail, regional rail (Virginia Railway Express), regional bus, local bus, express bus and bus rapid transit, longer-distance commuter bus, vanpool, slugging (casual carpooling), bikeshare, car share, taxi, and transportation network companies, while also supporting infrastructure, incentives, and educational programming.

Overall, 32.8% of Northern Virginia resident commuters travel using modes other than driving alone.

Among residents of Arlington, Alexandria, the town of Herndon, and the Innovation Station area (where the proposed sites are located), 42.9% of resident commuters travelled by a mode other than driving alone. Activity centers in Northern Virginia that are served by Metrorail stations have been documented to have much higher non-auto travel for both residents and workers. Automobile use is more common for residents of the larger Washington region.

Residents of the Greater Washington region use public transit more than almost any other metro area in Northern America.

According to a Brookings Institution analysis of government survey data, DC is second only to New York City for the share of residents using transit among the North American metros analyzed.

The percentage of residents using transit in DC exceeds that in Toronto by over 10 percentage points and more than doubles that in Boston, the next highest-ranked metro in the United States.

Residents using transit in select North American metros, 2016 (U.S. metros) and 2011 (Canadian metro)
Percent

Metro	Percent
New York-Newark-Jersey City, NY-NJ	40
Washington-Arlington-Alexandria, DC-VA-MD-WV	37
Toronto, Canada	25
Boston-Cambridge-Newton, MA	15
Chicago-Naperville-Elgins, IL-IN-WI	13
Philadelphia-Camden-Wilmington, PA	12
Pittsburgh, PA	5
Los Angeles-Long Beach-Glendale, CA	5
Denver-Aurora-Lakewood, CO	5
Miami-Fort- Lauderdate-West Palm Beach, FL	5
Atlanta-Sandy Springs-Roswell, GA	3
Austin-Round Rock, TX	3
Columbus, OH	2
Dallas-Fort Worth-Arlington, TX	2
Nashville-Davidson--Murfreesboro--Franklin, TN	2
Raleigh, NC	1
Indianapolis-Carmel-Anderson, IN	1
Pittsburgh, PA	
Washington, DC	

Source: Brookings Institution analysis of American Community Survey 2016 5-year estimates and Canadian 2011 National Household Survey

Commute Mode Split for the Washington Region and Proposed Sites

Mode	Washington-Arlington-Alexandria DC-VA-MD-WV Metro Area	Areas Immediately Adjacent to Proposed Sites (Herndon, McNair, Alexandria, and Arlington)	
	All Residents (%)	Residents Who Commute from These Areas (%)	Workers Who Commute to These Areas (%)
Drive Alone	67%	58.3%	64.4%
Carpool/Vanpool	9.7%	7.5%	9.8%
Bus	5.2%	7.4%	6.3%
Metrorail	8.1%	15.0%	9.3%
Commuter Rail	0.8%	0.3%	1.4%
Bicycle	0.8%	1.5%	0.8%
Walking	3.3%	4.3%	5.2%
Worked at Home	5.2%	5.7%	4.5%

Source: American Community Survey 2012-2016

Arlington and Alexandria residents:
44-59% commute by car
18-38% commute by train or bus
3% commute by carpool or vanpool
6-7% commute by bike or walking

Workers who commute to Arlington and Alexandria:
55-72% commute by car
11-23% commute by train or bus
3-8% commute by carpool or vanpool
4% commute by bike or walking

Fairfax and Loudoun County Residents:
80-86% commute by car
10-4% commute by train or bus
2-3% commute by bike or walking

However, both Fairfax and Loudoun Counties are large jurisdictions covering over 900 square miles, so use of modes varies by location. If the countywide statistics are compared to a representative Transit Oriented Development (TOD) location with Metrorail access such as Merrifield (along the Orange line) in Fairfax County, then the numbers shift significantly to other modes.

In Merrifield:
60% of residents commute by car
Almost 33% of residents commute by rail or bus
5% commuting by bike or walking

Northern Virginia is served by a robust, integrated highway network.

This network includes numerous Interstate or equivalent major limited access highway corridors, as well as several parkways and other corridors that also function as major regional commuting trunk routes. These include I-95, I-66, I-395, I-495 (the Washington Beltway), the Dulles Toll Road, the George Washington Memorial Parkway, US-50, US-29, US-1, US-15, VA-28, VA-7, VA-110, and VA-286. Arterial roadways blanket the region and link the various jurisdictions within Northern Virginia.

Three of these corridors, I-66, I-95/395, and the Dulles Toll Road, function as the spines for major multimodal and land development corridors radiating from Washington, D.C., around which much of Northern Virginia's growth has occurred. Other corridors serve as "crosstown," parallel, or supporting routes.

Where major roads and transit facilities come together to serve higher-density job and housing clusters, including around the four proposed sites, grids of local streets serve local trips and the last miles of longer trips.

Since 2007, the region has increased funding for highway construction in Northern Virginia. This investment in highways has increased significantly since the Virginia General Assembly provided new transportation revenues to Northern Virginia in 2013. In addition, the Virginia Department of Transportation has advanced or is advancing express lanes projects on all of the interstates in Northern Virginia. Information regarding the adjacent highway network is included in the discussion of each individual site.

Public transit plays a central role in commuting in Northern Virginia, as well as maintaining and enhancing quality of life.

Land use and transportation development are coordinated in Northern Virginia. This ensures that population, job density, and public transit investment are interrelated to maximize an individual's access to work, household, and leisure activities. According to the region's 2016 State of the Commute Report, 89% of commuters in Northern Virginia say that transit serves their home, and 86% say that it serves their place of work. All of the proposed Northern Virginia sites have high accessibility to transit.

Public transit is central to commuting in the D.C. area as a whole, as well. The Washington Metro Area Transit Authority's (WMATA) rail and bus services alone deliver one million trips on an average weekday, and 54% of all jobs in the region are located within a half mile radius of Metrorail or Metrobus stops. WMATA's rail and bus services remove more than one million car trips from the DC area's roads each day.

Northern Virginia's proposed sites benefit from close proximity to residential and retail areas accessible by walking and biking.

Through focused density planning, land uses that cluster growth into mixed-use centers, and high-quality infrastructure, walking and biking are often the most convenient method of travel. Commuters can be confident that leaving the car at home is not only safe and practical, but is increasingly a standard practice for many workers at proposed sites who walk and bike to lunch, errands, and meetings during the work day.

Northern Virginia maintains over 500 miles of on-road bike lanes and off-road paths across the region. An additional 530 miles will be added by 2040 as the region continues planning and expanding trail networks (VDOT Regional Bikeway and Trail Network Study). Several regional trails are nationally- and internationally-recognized, including the Washington & Old Dominion Rail Trail, the Custis Trail, the Four-Mile Run Trail, the Mount Vernon Trail, and the Holmes Run Trail. This multiuse trail infrastructure has contributed to a rapidly growing bicycle culture throughout Northern Virginia, where Alexandria, Arlington County, Vienna, Reston, and Fairfax County have been designated "bicycle friendly communities" by the League of American Bicyclists.

Arlington, Alexandria, and Fairfax are also partners in Capital Bikeshare, the third largest regional bikeshare system in the US. Serving over three million trips annually on over 4,000 bicycles, Capital Bikeshare has about 170 stations in Northern Virginia alone and often serves as a first mile or last mile connection to transit. The system facilitates social and household trips at all times of day, including when and where transit is less frequent.
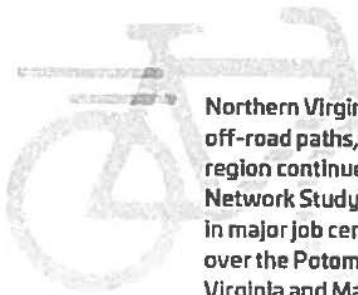
Northern Virginia maintains over 500 miles of bike trails, including on-road bike lanes and off-road paths, across the region, and an additional 530 miles will be added by 2040 as the region continues planning and expanding trail networks (VDOT Regional Bikeway and Trail Network Study). High-priority expansion projects include improving the bike lane networks in major job centers such as the four proposed sites, additional bicycle/pedestrian bridges over the Potomac River between Arlington and DC, and a "Bicycle Beltway" connecting Virginia and Maryland. Several regional trails are known nationally and internationally, including the Washington & Old Dominion Rail Trail, the Custis Trail, the Four-Mile Run Trail (along a stream bearing that name), the Mount Vernon Trail (which runs along the National Park Services' George Washington Parkway from Rosslyn to Mount Vernon), and the Holmes Run Trail. This multiuse trail infrastructure has contributed to a rapidly growing bicycle culture throughout Virginia and to the designation of Alexandria, Arlington County, Vienna, Reston, and Fairfax County as "bicycle friendly communities" by the League of American Bicyclists.

Arlington, Alexandria, and Fairfax are also partners in one of the nation's preeminent bikeshare systems - Capital Bikeshare. The third largest regional bikeshare system in the US, serving over 3 million trips annually on over 4,000 bicycles, there are about 170 stations in northern Virginia alone. Capital Bikeshare often serves as a first mile or last mile connection to transit, while facilitating social and household trips at all times of the day, including when and where transit is less frequent.

Northern Virginia invests aggressively and strategically in transportation demand management (TDM) programs.

These programs make it easier for people to find their best-fit commuting strategy and to maximize the capacity, efficiency, and use of our transportation system across time and mode. Federal, state, regional, and local resources support TDM in Northern Virginia with over $10 million a year going toward marketing and promotions (e.g., transit and bike system maps, Bike to Work Day), transportation options incentive funds (subsidies for carpools, vanpools, and transit riders), digital transit information displays, smartphone applications such as CarpoolNow and carfreeAtoZ, and many other tailored initiatives.

Northern Virginia has several robust funding sources dedicated to continually supporting our growing economy and expanding options for commuting and travel.

These sources add up to approximately $14.2 billion in improvements currently planned and funded to support Northern Virginia over the next six years, including investments in highways, transit, rail, and airports. In the longer term, the metro area's Constrained Long-Range Plan identifies a total of $29 billion in capital improvements to Northern Virginia's highway and transit systems through 2030— making Northern Virginia the largest recipient of transportation investment in the entire metro area over the next 12 years. Northern Virginia's cutting-edge investments in transportation are made possible by its diverse and innovative revenue streams, including sustainable toll revenues and public-private partnerships.

Travel and commuting are not confined to roads, trails, and tracks.

Services such as the Wharf Water Taxi, provided by the Potomac Riverboat Company, make use of Northern Virginia's beautiful location on the Potomac River to provide a unique and convenient form of travel. Water taxis offer direct routes to locations across Northern Virginia and Washington D.C., such as Old Town Alexandria and Georgetown. Trips range from 30 to 45 minutes in length.

The region also has explored the use of cable gondolas to connect Rosslyn, in Arlington County, to Georgetown. The proposed transit system was deemed feasible by a 2016 study, and the region's localities continue to explore options to fund and construct the system.

For each site, the following maps detail short-term multimodal commitments as of 2017, as well as the infrastructure improvements planned for the year 2030.

NoVA Multimodal Infrastructure 2017

NoVA Multimodal Infrastructure 2030
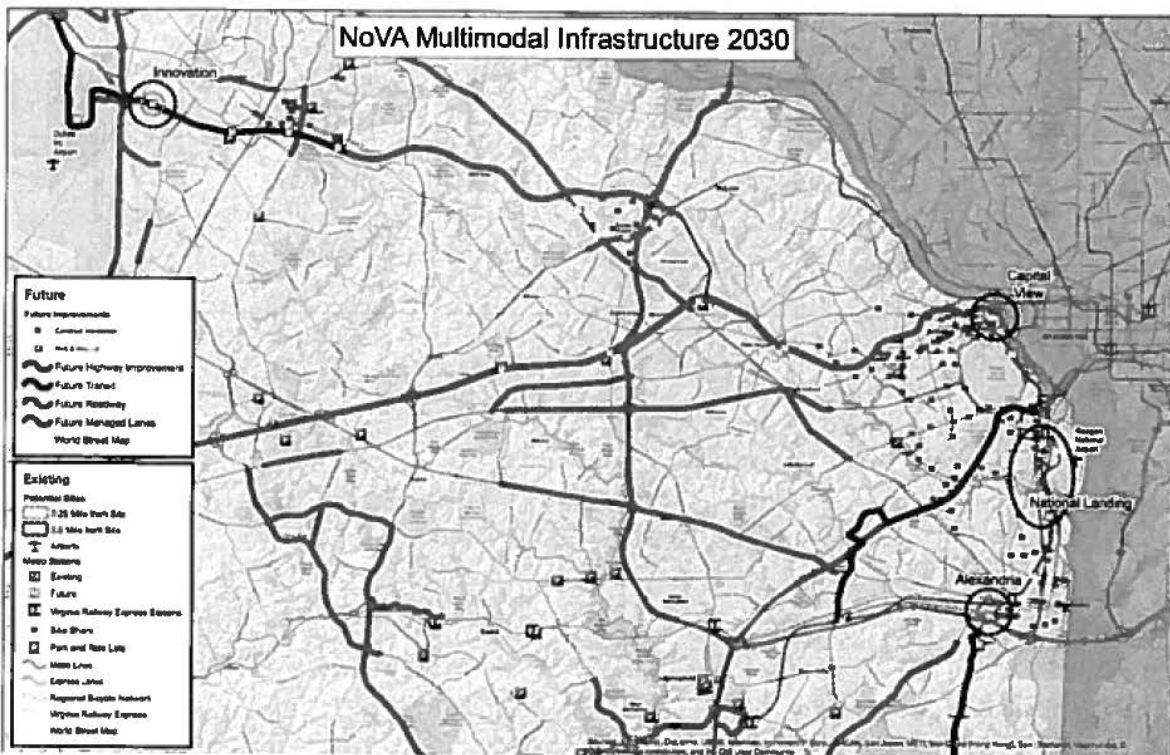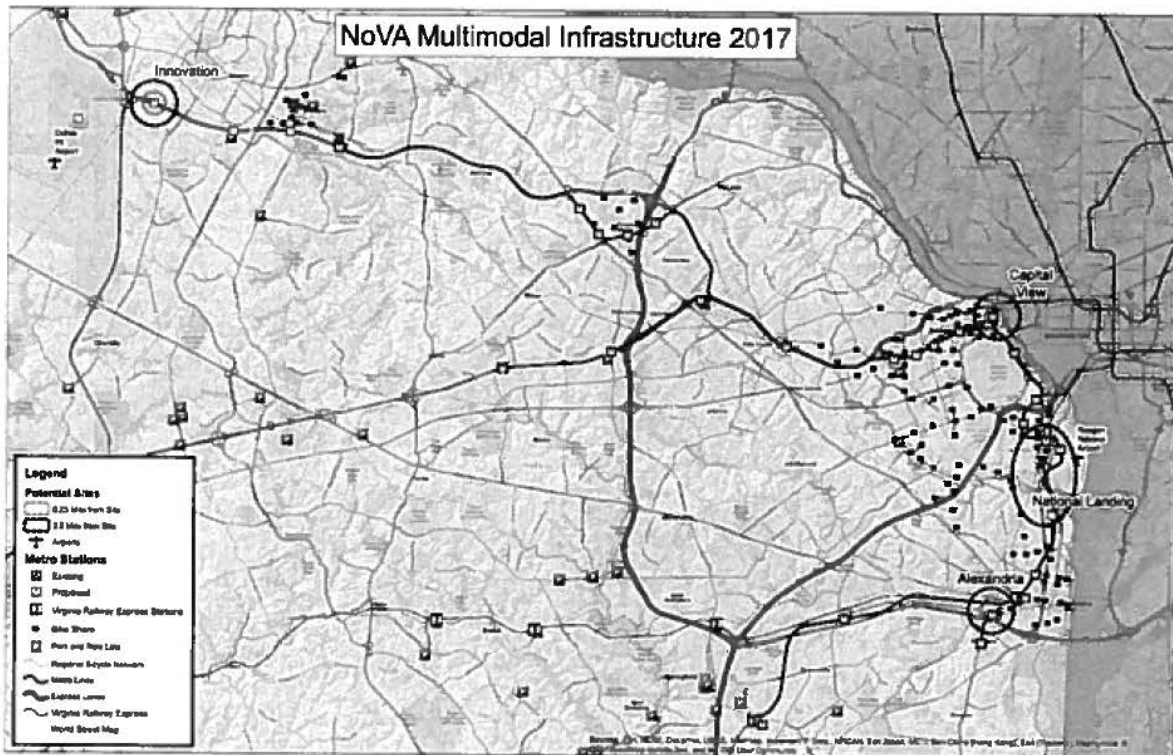
Average travel times for commutes hover around 30-35 minutes across the Northern Virginia region.

For the D.C. metro area as a whole, the average travel time to work is 34.4 minutes. These commute times continue to improve, with the region's annual hours of delay decreasing every year since 2008. Furthermore, a 2016 survey indicates that 81% of commuters in the Washington, D.C. metro region are neutral to satisfied with their commute, with 58% satisfied or very satisfied.

The following heat maps represent average auto and transit travel times in the vicinity of each site in 2016 and in 2030.

Alexandria Site Commuting Shed within 10 miles
AM Auto Travel Times 2016

5 miles

10 miles

★ Proposed Site Location

Auto Travel Time

▓	0 - 15 Minutes
▓	16 - 30
▒	31 - 45
▒	46 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), Mapmyindia, © OpenStreetMap contributors, and the GIS User Community

Alexandria Site Commuting Shed within 10 miles
AM Auto Travel Times 2030

5 miles

10 miles

★ Proposed Site Location

Auto Travel Time

0 - 15 Minutes
16 - 30
31 - 45
45 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Alexandria Site Commuting Shed within 10 miles
AM Transit Travel Times 2016

5 miles

10 miles

★ Proposed Site Location

Transit Travel Time

0 - 15 Minutes
16 - 30
31 - 45
45 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Alexandria Site Commuting Shed within 10 miles
AM Transit Travel Times 2030

5 miles

10 miles

★ Proposed Site Location

Transit Travel Time

0 - 15 Minutes

16 - 30

31 - 45

45 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Capital View Site Commuting Shed within 10 miles
AM Auto Travel Times 2016

5 miles

10 miles

★ Proposed Site Location

Auto Travel Time (Minutes)

0 - 15 minutes
16 - 30
31 - 45
46 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN,
Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, ©
OpenStreetMap contributors, and the GIS User Community

Capital View Site Commuting Shed within 10 miles
AM Auto Travel Times 2030

5 miles

10 miles

★ Proposed Site Location

Auto Travel Time (Minutes)

0 - 15 minutes
16 - 30
31 - 45
46 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN,
Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), Mapmyindia, ©
OpenStreetMap contributors, and the GIS User Community

Capital View Site Commuting Shed within 10 miles
AM Transit Travel Times 2016

★ Proposed Site Location

Transit Travel Time (Minutes)
- 0 - 15 minutes
- 16 - 30
- 31 - 45
- 46 - 60

5 miles

10 miles

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia © OpenStreetMap contributors, and the GIS User Community

Capital View Site Commuting Shed within 10 miles
AM Transit Travel Times 2030

5 miles

10 miles

★ Proposed Site Location

Transit Travel Time (Minutes)

0 - 15 minutes
16 - 30
31 - 45
46 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN,
Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), Mapmyindia, ©
OpenStreetMap contributors, and the GIS User Community

Innovation Site Commuting Access
AM Auto Travel Times 2016

Innovation Site Commuting Shed
AM Auto Travel Times 2030

5 miles

10 miles

15 miles

20 miles

★ Proposed Site Location

Auto Travel Time (Minutes)

0 - 15 minutes

16 - 30

31 - 45

46 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, OpenStreetMap contributors, and the GIS User Community

Innovation Site Commuting Shed
AM Transit Travel Times 2016

5 miles
10 miles
15 miles
20 miles

★ Proposed Site Location

Transit Travel Time (Minutes)

0 - 15 minutes
16 - 30
31 - 45
46 - 60

Innovation Site Commuting Shed
AM Transit Travel Times 2030

5 miles
10 miles
15 miles
20 miles

★ Proposed Site Location

Transit Travel Time (Minutes)
0 - 15 minutes
16 - 30
31 - 45
46 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, OpenStreetMap contributors, and the GIS User Community

National Landing Site Commuting Shed within 10 miles
AM Auto Travel Times 2016

5 miles

10 miles

Proposed Site Location

Auto Travel Time (Minutes)

- 0 - 15 minutes
- 16 - 30
- 31 - 45
- 46 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

National Landing Site Commuting Shed within 10 miles
AM Auto Travel Times 2030

5 miles

10 miles

★ Proposed Site Location

Auto Travel Time (Minutes)

0 - 15 minutes
16 - 30
31 - 45
46 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

National Landing Site Commuting Shed within 10 miles
AM Transit Travel Times 2016

5 miles

10 miles

★ Proposed Site Location

Transit Travel Time (Minutes)

- 0 - 15 minutes
- 16 - 30
- 31 - 45
- 46 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

National Landing Site Commuting Shed within 10 miles
AM Transit Travel Times 2030

5 miles

10 miles

Proposed Site Location

Transit Travel Time (Minutes)

0 - 15 minutes
16 - 30
31 - 45
46 - 60

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

The Alexandria site is served well by all transportation modes and allows for convenient travel times to the site.

The existing grid of streets allows for easy walking and biking to nearby mixed-use neighborhoods such as Carlyle and Old Town Alexandria. The area has a walkability score of 69. Bicycle travel times vary by origin, including 52 minutes from the Farragut West area of downtown Washington D.C. (7 miles), 43 minutes from Springfield Town Center (6.2 miles), and 28 minutes from Pentagon City in Arlington (4.4 miles).

A variety of transit options are conveniently accessible, such as Metrorail, Metrobus, Amtrak, Virginia Rail Express, and DASH, Alexandria's local transit service. Transit travel times to the Alexandria site vary by origin, including 35 minutes from downtown Washington D.C., 38 minutes from Springfield Town Center, and 14 minutes from Pentagon City. Alexandria is the only jurisdiction in Northern Virginia with access to water taxi service, connecting the City with points in D.C. and Maryland.

The well-formed existing and planned street grid, adjacent arterials including Eisenhower Avenue, Duke Street, and direct access to the Capital Beltway (I-495) allow for easy vehicular access to the Alexandria site. Auto travel times vary by origin and include 27 minutes from downtown Washington D.C., 12 minutes from Springfield Town Center, and 21 minutes from Pentagon City.

In terms of population, 410,729 northern Virginians reside between 0-15 minutes of auto travel minutes from Alexandria site; 625,699 between 16-30 minutes; 1,000,669 between 31-45 minutes; and 1,087,858 between 46-60 minutes.

The Capital View site is served well by all transportation modes and allows for convenient travel times to the site.

The existing grid of streets allows for easy walking and biking to nearby mixed-use neighborhoods, including Clarendon and Courthouse in Arlington and Georgetown in Washington, D.C. Prior investment in the street network has given the commercial heart of Rosslyn a "Very Walkable" Walk Score of 89, and Rosslyn's existing bike infrastructure has earned a "Very Bikeable" Bike Score of 76.

Generally speaking, for employees living within five miles of the Capital View site, commutes by car could range from 7-17 minutes, commutes by transit could range from 5-29 minutes, and commutes by bike from 12-40 minutes, based on a small sample of neighborhoods with varying transit and trail access. For employees living between 5-10 miles of the Capital View site, commutes by car could range from 14-27 minutes, commutes by transit could range from 29-65 minutes, and commutes by bike from 42-75 minutes, based on a small sample of neighborhoods with varying transit and trail access.

Bicycle travel times vary by origin, and include 47 minutes from Bethesda (nine miles), 42 minutes from Falls Church (seven miles), 12 minutes from Clarendon (two miles), and 28 minutes from the Shaw neighborhood in Washington D.C (five miles).

Transit options are prevalent, including Metrorail, Metrobus, ART bus, and the Circulator. Transit travel times to Capital View vary by origin, including 32 minutes from Bethesda, 5 minutes from Clarendon, and 28 minutes from Shaw, Washington D.C.

The existing and planned street grid and proximity to highways such as Interstate 66 allow for easy vehicular access to the Capital View site. Vehicle travel times vary by origin, and include 27 minutes from Bethesda, seven minutes from Clarendon, and 19 minutes from Shaw, Washington D.C.

In terms of population, 260,251 northern Virginians reside between 0-15 minutes of auto travel from the Capital View site; 684,791 between 16-30 minutes; 819,820 between 31-45 minutes; and 1,123,940 between 46-60 minutes.

The Innovation Station area is well-served with regional access from two major highways – Route 28 and the Dulles Toll Road (Route 267) – and will be served by all transportation modes by 2020.

In addition to the regional road network, there is also a planned multimodal street grid that will accommodate all types of travel throughout the Innovation Station site. Vehicle travel times vary by origin, and include four minutes to the Dulles International Airport, 12 minutes to Reston, 18 minutes to Tysons, 12 minutes to Ashburn, and 40-45 minutes to Washington D.C. The current average travel time to the Innovation Station site for residents who live in Northern Virginia and drive alone or commute via high occupancy vehicle, during the a.m. peak period (6:00 a.m. to 9:00 a.m.), is estimated to be approximately 19 minutes and 30 minutes, respectively. For residents who live in the larger Washington Metro area, the average travel time to the site is 30 minutes for driving alone and 23 minutes when commuting via a high occupancy vehicle.

The site is served by two bus operators (Fairfax Connector and Loudoun County Transit) and both providers are proposing modifications to the local bus systems to provide direct access from the site to the currently closest Metrorail station at Wiehle-Reston East, which is a 10-12 minute bus ride. When the Innovation Center Station opens in 2020, the bus routes will be modified again. At the same time, when the Innovation Center Station opens, transit commutes using the Metrorail system will decrease. It is anticipated that Reston and Tysons to the east will be a six minute and 20 minute train ride, respectively. To the west the Dulles Airport stop and Ashburn stop will be approximately a three minute and 15 minute train ride, respectively. Traveling further on the Silver Line, Arlington can be reached in approximately 40 minutes and the Metro Center Station (middle of the metro system) in 55 minutes.

In addition to traveling by auto or transit, the site is also accessible via bicycling. There are many communities that surround the site that are within an hour's bike ride. Ashburn (eight miles) and Sterling (four miles) in Loudoun County are a 41 minute ride and 21 minute ride, respectively. In Fairfax County, Herndon (two and a half miles) and Reston (five miles) are less than a 30-minute commute. Chantilly, to the south, is 10 miles away and still within an hour's commute, at 54 minutes.

There are roughly 2.7 million people that live within a one-hour auto commute of the Innovation Station site. Broken down in 15 minute travel intervals 188,204 reside between 0-15 minutes of the Innovation Station site; 759,811 between 16-30 minutes; 781,794 between 31-45 minutes; and 975,543 between 46-60 minutes.

The National Landing site is served well by all transportation modes and allows for convenient travel times to the site.

The existing grid of streets allows for easy walking and biking to nearby mixed-use neighborhoods including Crystal City and Pentagon City in Arlington, and the Del Ray neighborhood and Old Town in Alexandria. The area has a walkability score of 72 and a bike score of 85. Bicycle travel times vary by origin, including 60 minutes from Bethesda (nine miles), 34 minutes from Clarendon in Arlington County (three miles), and 28 minutes from the Farragut West area of downtown Washington D.C (three and a half miles).

Transit is easily accommodated by a variety of transit options including Metrorail, Metrobus, the Metroway (bus rapid transit), Amtrak, Virginia Rail Express (VRE) and DASH, Alexandria's local transit service. Transit travel times to National Landing vary by origin, including 40 minutes from Bethesda, 21 minutes from Clarendon, and 13 minutes from Downtown Washington D.C.

The well-formed existing and planned street grid, adjacent arterials including Route 1 and Potomac Avenue, and proximity to highways such as Interstate 395 allow for easy vehicular access to the National Landing site. Vehicular travel times vary by origin, and include 31 minutes from downtown Bethesda, 11 minutes from Clarendon, and 13 minutes from downtown Washington D.C.

In terms of population, 304,285 northern Virginians reside between 0-15 minutes of auto travel from the National Landing site; 642,117 between 16-30 minutes; 717,344 between 31-45 minutes; and 894,865 between 46-60 minutes.

Average Travel Costs

According to the Center for Neighborhood Technology's Housing and Transportation Affordability Index, in the Washington region, the average annual household transportation cost is $12,939—or 14% of a $92,324 median household income. Annual transportation costs for areas near the proposed sites are lower, ranging from $9,848 (or 11% of annual household income) to $12,970 (or 14% of income) in 2015. At some locations near the proposed sites, average costs are even lower.
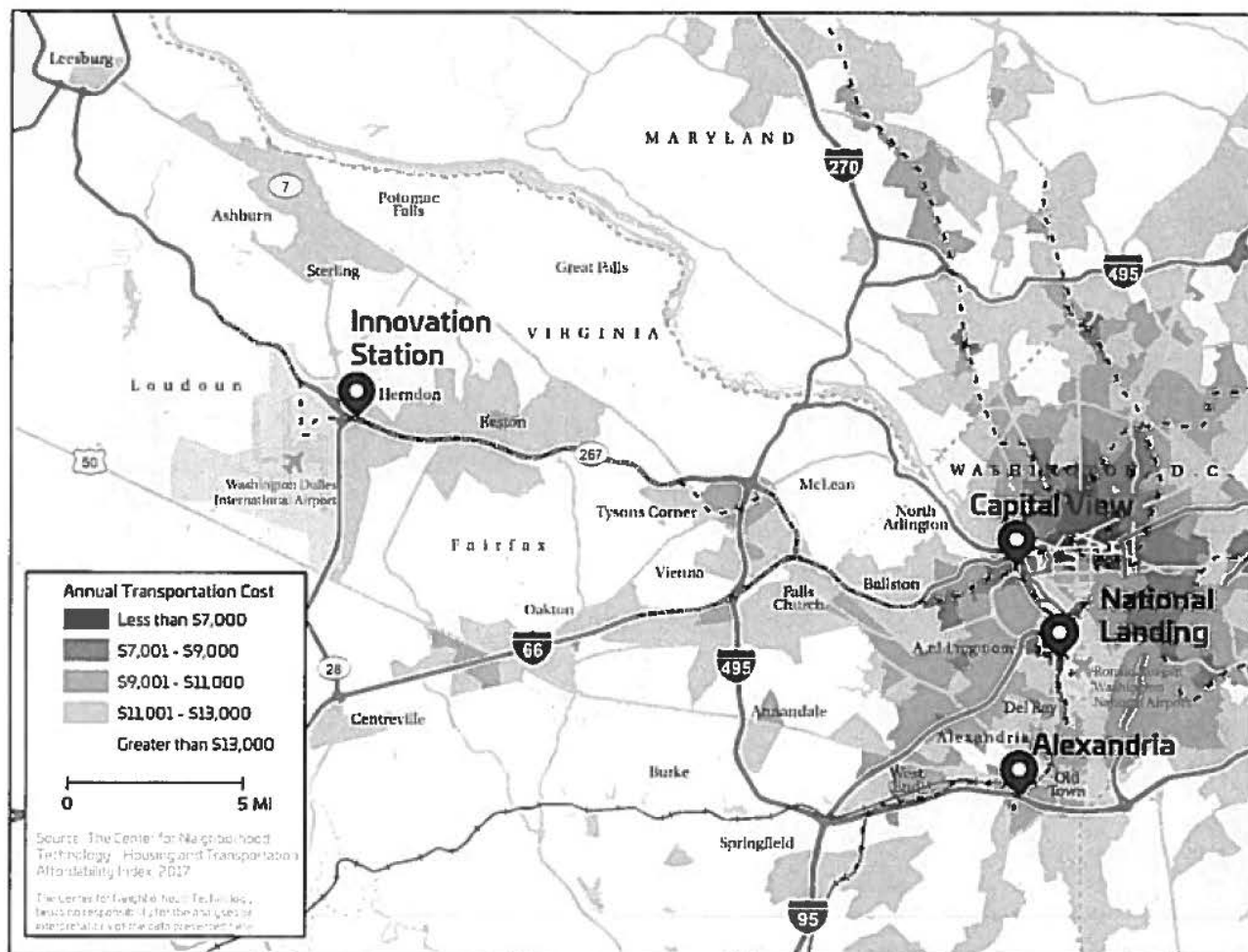
The average cost for a driver in northern Virginia is about $345/month.

This does not include parking or tolls. This figure is derived using the Metropolitan Washington Council of Government's Commuting Cost Calculator, calculated using the average round-trip commute in northern Virginia (54% commute 14.9 miles or less based on 2016 State of the Commute Survey) driving 20 days a month. It uses AAA's 2016 estimate for owning and operating a vehicle, which figures average fuel cost, maintenance, tires, insurance, license and registration and depreciation based on the composite average for small, medium and large sedans. Annual mileage is assumed to be 15,000.

By 2022, Northern Virginia's interstate highways will have a comprehensive 90+ mile network of Express Lanes.

Express Lanes are guaranteed to provide a high-speed, reliable trip to those who carpool, use transit, or choose to pay a toll. They also help reduce congestion in the general-purpose lanes. Today, there are more than 40 miles of express lanes along I-495 and I-95, with new express lanes being added to I-66 (32 miles), I-395 (eight miles) and I-95 (10 miles).

	495 Express Lanes*	95 Express Lanes**	66 Express Lanes ***
A.M. Peak			
Dec. 2017	$6.02	$8.75	$6.47
Last Quarter	$6.80	$10.20	
P.M. Peak			
Dec. 2017	$8.82	$10.33	$3.96
Last Quarter	$9.41	$11.34	

*495 Express Lanes 7am to 10am and 4pm to 7pm
**95 Express Lanes 6am to 9am and 4pm to 7pm
***66 Express Lanes first opened Dec. 4, 2017. Hours are weekdays, 5:30-9:30 a.m. eastbound only and 3-7 p.m. westbound only.

In addition, Route 267 connects Fairfax and Loudoun counties, including the Dulles airport, and consists of two toll roads: the Dulles Toll Road and the Dulles Greenway. The Dulles Toll Road includes High Occupancy Vehicle (HOV) lanes, as well.

Dulles Toll Road maximum price (on/off peak)	Dulles Greenway maximum price (peak)
$3.50	$6.50

Fares for Metrorail service vary based on the distance traveled and the time of day at entry.

During peak hours (weekdays from opening until 9:30 a.m. and from 3:00–7:00 p.m.), fares range from $2.25 to $6.00, depending on distance traveled. At all other times, fares range from $2.00 to $3.85 based on distance traveled. Discounted fares are available for school children, the disabled, and the elderly, and Metro charges off-peak fares on all federal holidays.

Local bus fares in Northern Virginia tend to be between $1.00 and $2.00, with special fares assigned for special routes such as airport express buses or long-distance service (such as from Loudoun County into Rosslyn or DC). Many local bus systems provide free or discounted service to groups such as young children and students. According to the Metropolitan Washington Council of Governments, the average daily fare for a transit commute (not including parking) in the region is about $7.

Crashes per mile traveled is lower in Northern Virginia and the region has the lowest traffic fatality rate of all regions in the Commonwealth.

The Virginia Department of Transportation maintains accident data at virginiaroads.org, which features a safety database, planned projects, and many other types of publicly available data. Northern Virginia is the most populated area of the Commonwealth with the highest traffic volume and thus more crashes overall than other parts of Virginia. However, crashes per mile traveled is lower in Northern Virginia and the region has the lowest traffic fatality rate of all regions in the Commonwealth. Pedestrian crashes are somewhat more frequent compared to other parts of the Commonwealth due to the significant non-motorized activity in the region's urbanized areas, with prevalent bicycle and foot traffic for commuting, transit access, and recreation.

Northern Virginia Accidents by Location and Type
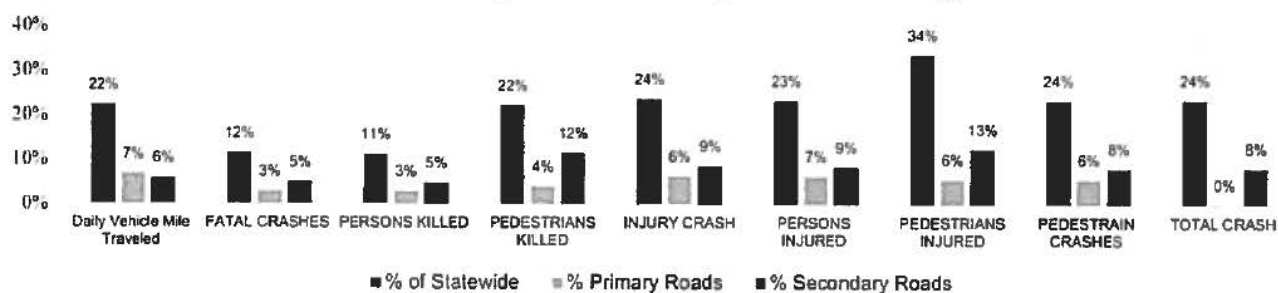
Source: National Highway Traffic Safety Administration

Only one location within the Alexandria site was identified as a "high crash location" in the City's recent crash analysis for the Vision Zero program.

Mill Road at Eisenhower Avenue had three crashes resulting in a severe injury between 2011 and 2016.

The following map shows that there are three frequent crash locations within a two-mile radius of the site in 2016. Funding from Virginia's Six-Year Improvement Program, the Highway Safety Improvement Program, and local sources will continue to be used to evaluate and improve safety issues in the area as needed.

Alexandria Site

Intersection	Location
1	Duke and South Washington
2	US 1 and Franklin St
3	US 1 and Gibson

★ Alexandria Site
● Frequent - Severe Crash Location
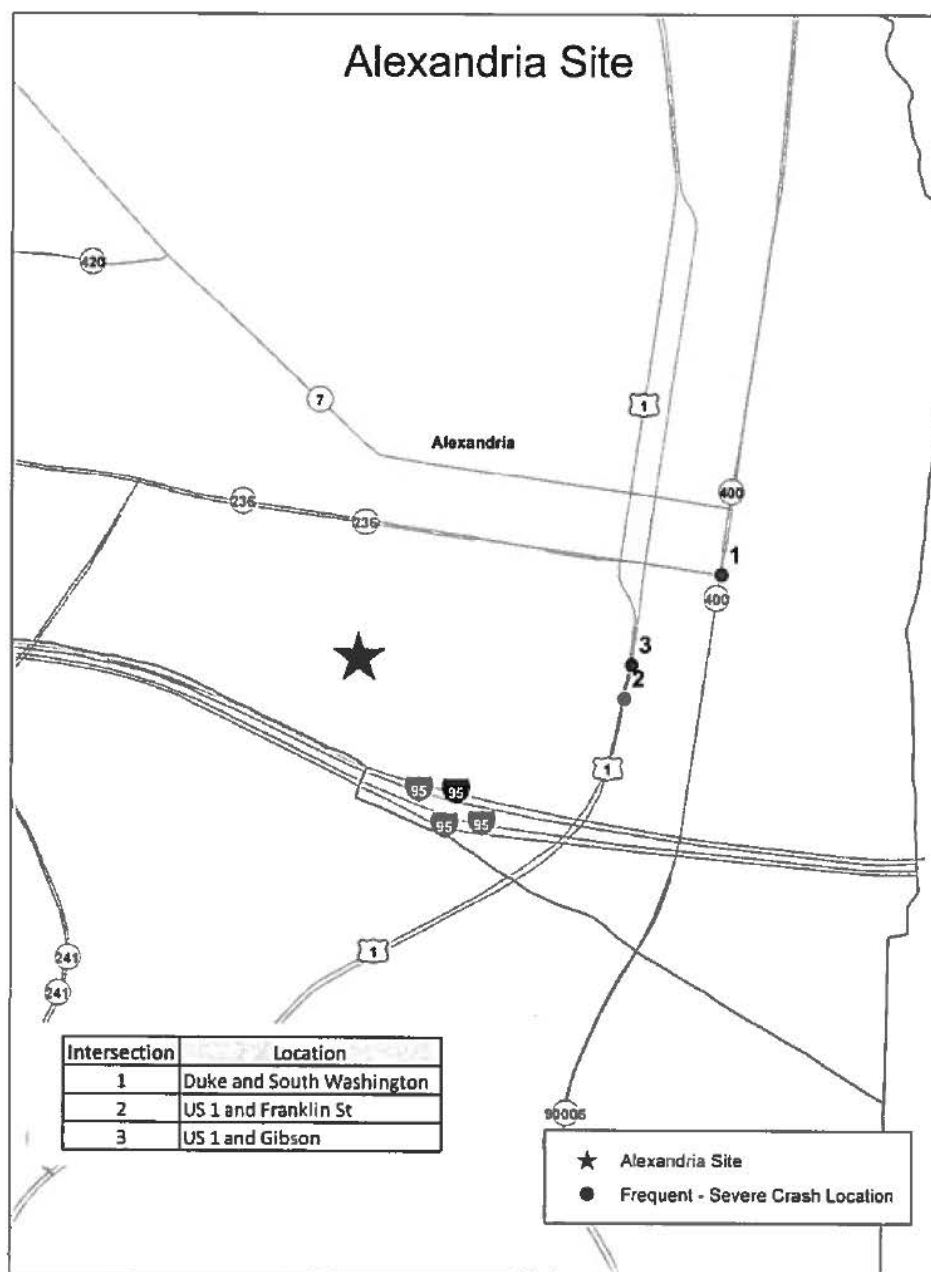
The Capital View site in Rosslyn is a major gateway in the center of the Washington Region and is well-served by every mode of transportation with large volumes of workers and residents using rail, bus, bike, walking, and car travel options.

This location also includes the approaches to two bridges connecting with the District of Columbia, the Key Bridge and the Theodore Roosevelt Bridge. This area, referred to as Rosslyn Gateway, has an average of seven severe injury or fatality crashes per year across four intersections. Arlington is currently investing more than $13 million on projects at this location to improve safety and multimodal access, with groundbreaking scheduled for this spring 2018.

The following map shows that there are seven frequent crash locations within a two-mile radius of the site in 2016. Funding from Virginia's Six-Year Improvement Program, the Highway Safety Improvement Program, and local sources will continue to be used to evaluate and improve safety issues in the area as needed.

Capital View Site

Intersection	Location
1	10th Street and Barton
2	Marshall Dr and Route 130
3	North Courthouse and 14st North
4	North Kirkwood and US 29
5	US 50 and Fillmore St
6	US 50 and North Highland
7	Wilson BLVD and Fairfax Dr

★ Capital View Site
● Frequent - Severe Crash Location
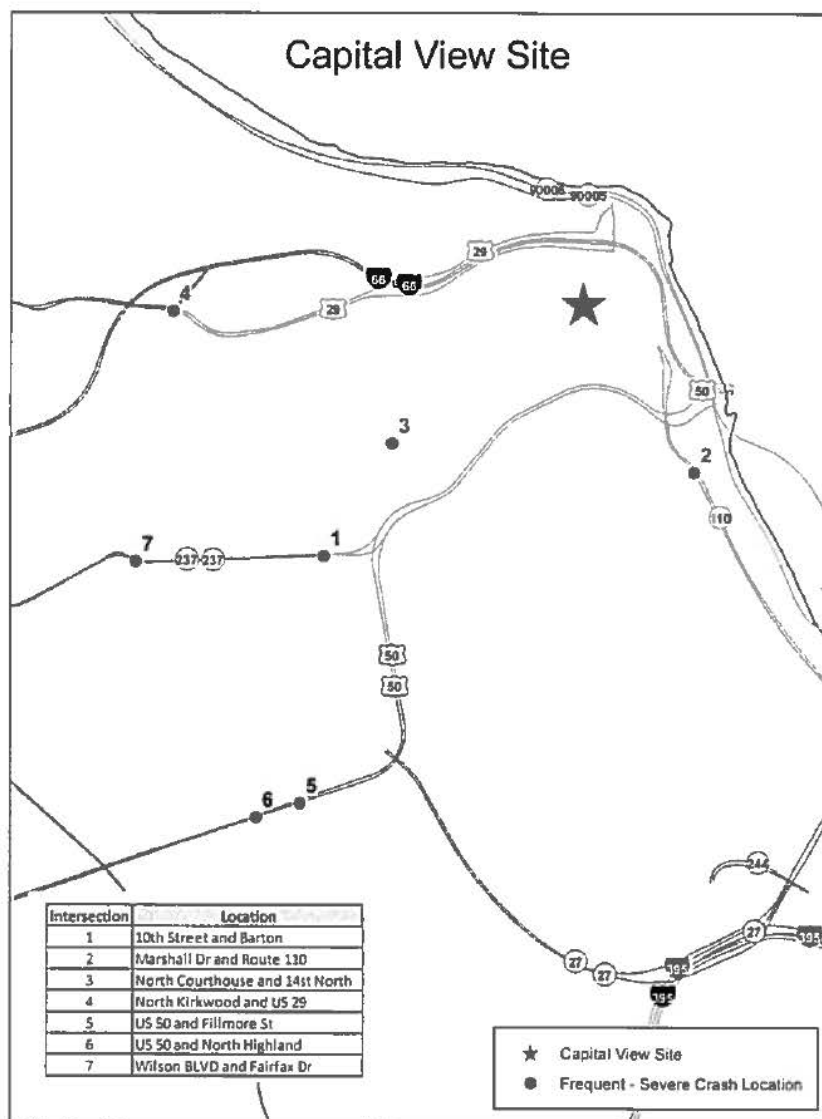
The Dulles Toll Road (VA 267) and Sully Road (VA 28) are the two principal arterials that will serve most of the vehicular traffic accessing the proposed Innovation Station site.

The Virginia Department of Motor Vehicles' (DMV) Highway Safety Office publishes crash data via an interactive mapping tool on their website, as part of their Traffic Records Electronic Data System (TREDS). High crash locations, referred to as clusters, are published annually in TREDS. No locations in the vicinity of the Innovation Station are on the DMV's high crash locations for years 2015-2017.

The following map shows that there are six frequent crash locations within a two-mile radius of the site in 2016. Funding from Virginia's Six-Year Improvement Program, the Highway Safety Improvement Program, and local sources will continue to be used to evaluate and improve safety issues in the area as needed.

Innovation Site

Intersection	Location
1	Centreville Rd and Worldgate Dr
2	Elden St and Locust St
3	Herndon PKWY and Elden St
4	Herndon PKWY and Sterling Rd
5	Old Ox 606 and Pacific BLVD
6	Old Ox 606 and Rock Hill Rd

★ Innovation Site
● Frequent - Severe Crash Location
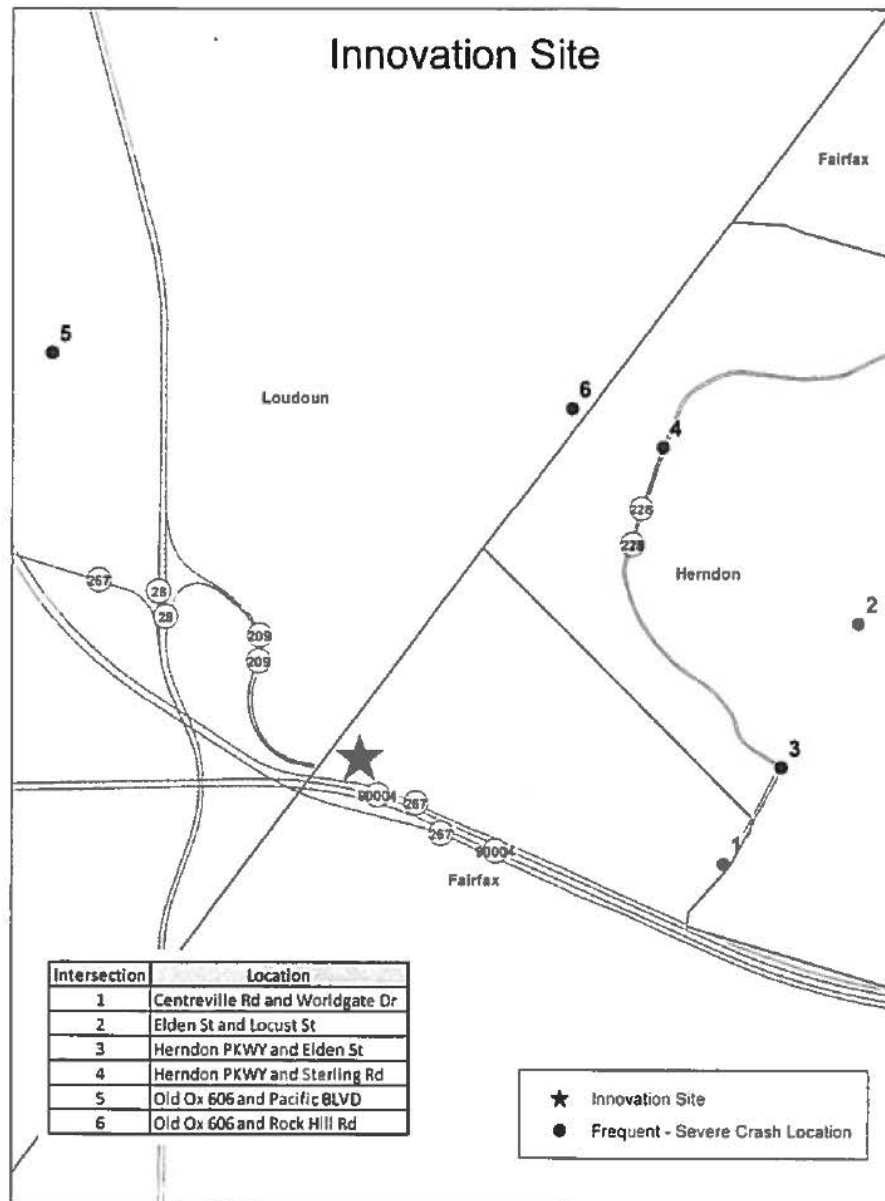
The National Landing location extends from Pentagon City, Crystal City and Potomac Yard in Arlington and includes the whole of Potomac Yard in Alexandria.

The northern gateway to this area, Army Navy Drive and South Hayes Street, has extensive transportation options and a very high level of transit, bicycle, and pedestrian activity. This gateway area experiences four severe injury or fatality crashes annually. Arlington is currently planning to invest more than $18 million to improve multimodal access and safety in this area with construction targeted for 2020.

In the southern portion of this site, which falls within Alexandria, there were no high crash locations identified in the Vision Zero crash analysis, but the City has plans to improve safety through their Complete Streets Program as well as Vision Zero efforts in the immediate future.

The following map shows that there are four frequent crash locations within a two-mile radius of the site in 2016. Funding from Virginia's Six-Year Improvement Program, the Highway Safety Improvement Program, and local sources will continue to be used to evaluate and improve safety issues in the area as needed.

National Landing Site

Intersection	Location
1	23rd and South Eads St
2	Commonwealth Ave and East Glebe
3	Mt Vernon Ave and West Glebe
4	US 1 and East Glebe

★ National Landing Site
● Frequent - Severe Crash Location
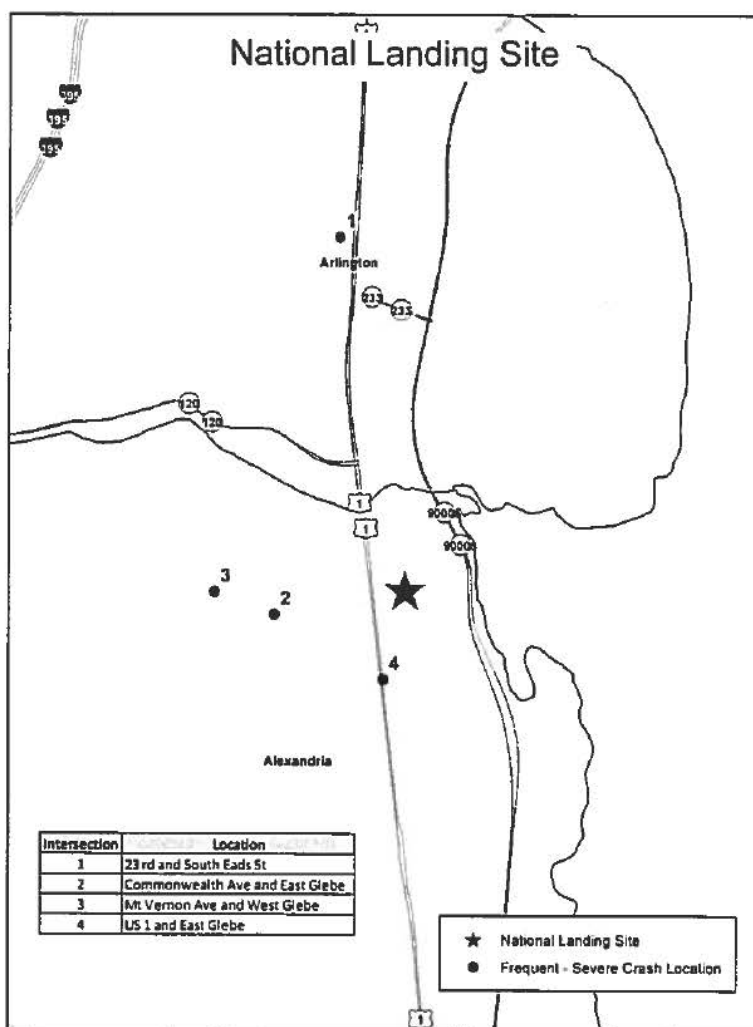
The metro is home to 11 nationally-ranked hospitals and treatment centers.

Hospitals in Northern Virginia
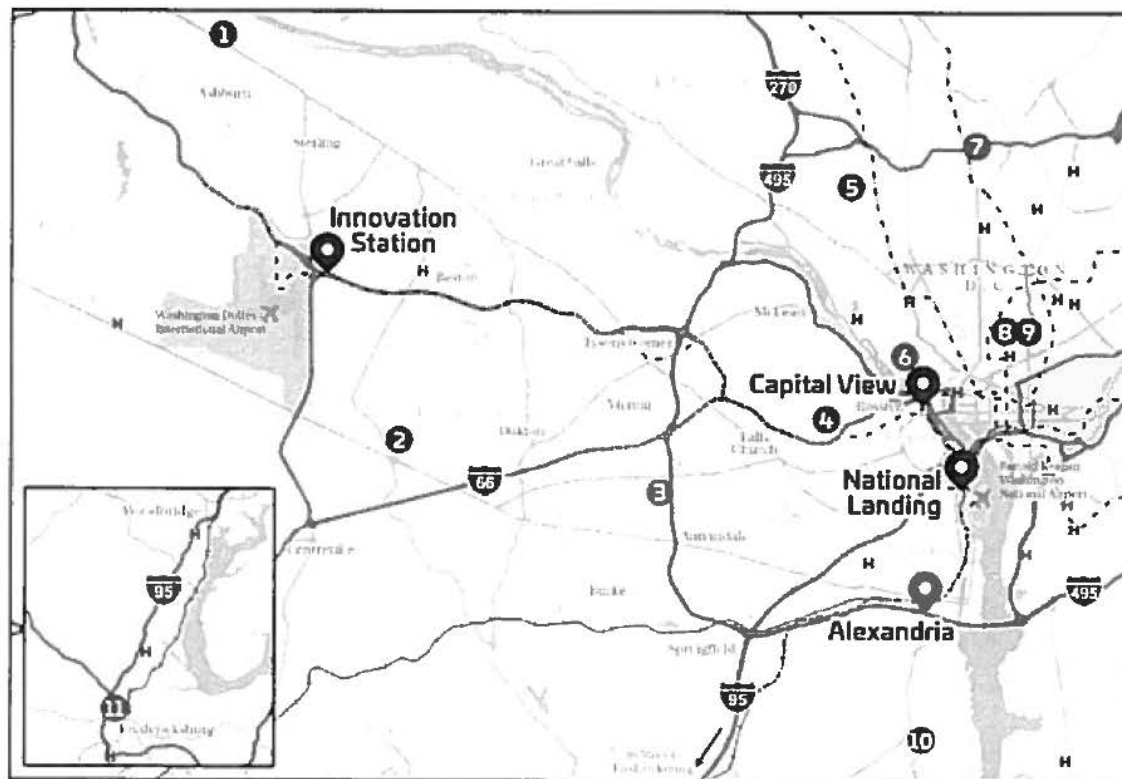
Top Ranked Hospitals

Hospital	Rank	Nationally Ranked & High Performing Specialties & Procedures
1 Inova Loudoun Hospital	#7 in Washington Metro Area #15 in Virginia	Gastroenterology & GI Surgery, Chronic Obstructive Pulmonary Disease (COPD), Colon Cancer Surgery, Heart Failure
2 Inova Fair Oaks Hospital	#6 in Washington Metro Area #14 in Virginia	Nephrology, Chronic Obstructive Pulmonary Disease (COPD), Colon Cancer Surgery, Heart Failure, Knee Replacement
3 Inova Fairfax Hospital	#3 in Washington Metro Area #7 in Virginia	#44 in Neonatology, Nephrology, Neurology & Neurosurgery, Aortic Valve Surgery, Colon Cancer Surgery, Heart Bypass Surgery, Heart Failure, Lung Cancer Surgery
4 Virginia Hospital Center	#4† in Washington Metro Area #9 in Virginia	Aortic Valve Surgery, Colon Cancer Surgery, Heart Bypass Surgery, Heart Failure, Hip Replacement, Knee Replacement
5 Suburban Hospital	#8† in Washington Metro Area #11T in Maryland	Orthopedics, Hip Replacement, Knee Replacement
6 MedStar Georgetown University Hospital	#1 in Washington Metro Area	#24 Adult Diabetes & Endocrinology, Geriatrics, Nephrology, Orthopedics, Urology, Chronic Obstructive Pulmonary Disease (COPD), Colon Cancer Surgery, Heart Failure, Hip Replacement, Lung Cancer Surgery
7 Holy Cross Hospital	#8† in Washington Metro Area #11† in Maryland	Chronic Obstructive Pulmonary Disease (COPD), Colon Cancer Surgery, Heart Failure
8 MedStar Washington Hospital Center	#4† in Washington Metro Area	#47 Adult Cardiology & Heart Surgery, Adult- Aortic Valve Surgery, Chronic Obstructive Pulmonary Disease (COPD), Colon Cancer Surgery, Heart Bypass Surgery, Heart Failure, Lung Cancer Surgery
9 Children's National Medical Center	#10 U.S. News Best Children's Hospitals Honor Roll	#1 Neonatology, #7 Pediatric Cancer, #9 in Pediatric Neurology & Neurosurgery, #9 in Pediatric Orthopedics, #10 in Pediatric Nephrology, #12 Pediatric Gastroenterology & GI Surgery, #16 in Pediatric Pulmonology, #16 Pediatric Diabetes & Endocrinology, #21 in Pediatric Urology, #32 Pediatric Cardiology & Heart Surgery
10 Inova Mount Vernon Hospital	#8† in Washington Metro Area #18 in Virginia	Orthopedics, Hip Replacement, Knee Replacement
11 Mary Washington Hospital	#2 in Washington Metro Area #6 in Virginia	Nephrology, Pulmonology, Chronic Obstructive Pulmonary Disease (COPD), Colon Cancer Surgery, Heart Failure

A.2a. Describe the largest social challenges your community is facing.
Describe the programs in place to address these challenges.
Describe any proposed programs to address these challenges.
Describe success measures for current and proposed programs.

We care about those in need.

Northern Virginia has myriad strengths and advantages – it is among the wealthiest, most diverse, most economically mobile, and residentially-integrated regions in the country. The region truly is one of the few places where people from all walks of life come together to live, learn, play, thrive, and work.

Despite these strengths, too many families continue to struggle to provide the stability and opportunity that so many others cherish. As Northern Virginia has benefitted from decades of strong economic growth, the region, like most other metros, still faces challenges extending these benefits and opportunities to all, quickly enough. Specifically, the region faces pockets of concentrated poverty that spin a complex web of challenges resulting in (and often caused by) lower educational and health outcomes.

These challenges, though certainly common to all major metropolitan areas, are being addressed head-on by metro, county, and local leadership from all angles – public, private, social, and educational.

Pockets of poverty present challenges and opportunities.

Economic gains over the last few decades have been distributed broadly in Northern Virginia, often crossing racial and nationality lines to benefit broad swaths of NOVA's residents. However, broad-based growth often masks the challenges that affect certain segments of the population more acutely and disproportionately than others. Though many regions would pat themselves on the back for achieving Northern Virginia's relatively low 6% poverty rate, this figure translates into 140,000 people across the region living in poverty - a figure hard to ignore.

The region understands that there is much more work to be done to alleviate the challenges facing these families and is making strides to better understand and address the issues. A recent study funded by the Northern Virginia Health Foundation analyzed neighborhood-level data to understand how poverty is impacting NOVA's most vulnerable residents (*Getting Ahead: The Uneven Opportunity Landscape in Northern Virginia*, November 2017). The report found 15 "islands of disadvantage" that experienced vast disparities in economic well-being, education, housing, and access to healthcare and transportation. For instance, despite Northern Virginia's low 3.6% unemployment rate and median annual household income of $106,000, 18 neighborhoods experienced unemployment rates over 10%, and 18% of neighborhoods had a poverty rate of 10% or higher.

Unfortunately, the economic hardships experienced by our region's parents extend to children and typically involve a complex web of associated challenges and outcomes.

Expensive and substandard housing in neighborhoods of concentrated poverty	Despite NOVA's relatively high sticker prices for housing, the region has a lower share of housing-burdened households than most metros. Nonetheless, nearly 260,000 people across 60 neighborhoods experience severe housing cost burdens (costs >50% of income) and over 60% of renters in 44 neighborhoods reported substandard living conditions (e.g., incomplete plumbing, overcrowding).
Limited access to health insurance resulting in lower health outcomes	The hardships associated with poverty can have life-or-death consequences; life expectancy in NOVA vary from 71 years in the most challenged neighborhoods to 89 years in the most affluent neighborhoods. Nearly 240,000 people lack access to health insurance, with 45 neighborhoods facing the challenge of having an uninsured population of 25% or more.
Limited access to quality early childhood educational opportunities	In addition to severe resource constraints, many children in these households are not able to take advantage of critical educational opportunities. For instance, a wide disparity in access to preschool exists, with 99% of 3-4 year olds in 44 census tracts attending preschool versus more than 80% of 3-4 year olds in 52 census tracts not attending. This lack of access to formative early learning experiences exacerbates the effects of living in poverty.

The challenges facing the most vulnerable populations in Northern Virginia, like the rest of America, are interconnected, requiring a committed response from all corners of the community. NOVA has by no means discovered the key to eliminating poverty, but the region's efforts and commitment to ensuring equal access to opportunity for all of its residents have created one of the most fair and upwardly mobile regions in the country.

This mobility can be measured and is impactful. Economist Raj Chetty estimates that a child born into the 25th percentile in Northern Virginia will likely progress to the 48th percentile by age 30, far stronger upward mobility than experienced by children in most metros. Chetty recently refined his county-level analyses to estimate the causal impact of living in each county in America, finding a nearly 11% positive increase in earnings at age 26 for children living in one of the four counties in Northern Virginia. There are only two other localities in the Top 20 – Montgomery County and Miami – that have a positive impact on one's future earnings.

Living in NOVA has real, positive, and tangible impact on children's economic prospects. We will continue building on the fundamentals that drive economic mobility (i.e., quality schools, safe and integrated neighborhoods), working to reduce the numbers of residents who start in challenged conditions. Much work remains, but Northern Virginia's businesses, public officials, community leaders, and everyday citizens continue to tackle these issues head-on.

Northern Virginia has a broad-based approach to tackling the challenges associated with poverty.

Level of action	Details
At a policy level	It is vital that public officials have access to the granular data that allows for effective decision-making. To this end, the Community Foundation for Northern Virginia recently launched The Opportunity Index for Northern Virginia, an interactive data resource available for free to the public through the Community Foundation's website.
At a systems level	A joint effort between local business leaders, engaged citizens, and the Community Foundation launched the Community Wealth Building initiative in 2017. This system's approach to economic development is focused on lifting "hard-to-employ" segments of the workforce out of poverty. Numerous public agencies throughout the region are focused on tackling issues associated with poverty, whether addressing employability, providing temporary benefits, or delivering other direct services to mitigate short-term challenges facing our residents.
At a grassroots level	Northern Virginia benefits from the efforts of countless non-profit organizations, religious institutions, and businesses devoted to improving the well-being of their fellow residents. Volunteer programs like Arlington Foundation's Bridges Out of Poverty coordinate and leverage the services of over 50 community organizations to improve the lives of our most vulnerable populations.

Each regional, local, and nonprofit entity has their own metrics to measure success for their particular initiatives.

For instance:

- Early childhood education providers are working to increase the numbers of low-income students enrolled in three- and four-year-old education programs.

- School leaders at all levels and across all districts are focused on closing the achievement gaps between economically disadvantaged and non-economically disadvantaged students.

- Public officials are focused on reducing the percentage of households that are housing and/or food insecure.

- Program administrators at workforce and other agencies focus on increasing completion and placement rates for program participants, especially individuals considered hard to employ.

A.2.b. Describe ways businesses are partnering with your community to solve these social challenges (including those that encourage volunteerism).

We are working together to serve our community.

For years the corporate community in Northern Virginia has been engaged in volunteer and philanthropic efforts, particularly to provide resources and improve opportunities for the needy in the community.

From volunteer coordination efforts to deep, sustained public-private partnerships and investments, the business community in NOVA is committed to making the region one where everyone thrives.

For instance, Volunteer Arlington is a new effort that provides employers with turnkey services to conduct an employee volunteer program. This allows employees to connect with local nonprofit organizations to deliver volunteer services in the area of their choosing. The service is highly customizable to meet the needs and preferences of any size employer. In January 2018, the County's MLK Day of Service event drew 600 people who spent the day working with local nonprofit organizations.

An example of long-term, deep public-private partnership is the between Aldrin Elementary School in Fairfax County and Worldgate LLC, a woman-owned technology consulting firm. As a business partner with Aldrin Elementary School in Reston since 2012, Worldgate has provided funds and volunteer hours to pack weekend food for 50 Aldrin families every week throughout the year. Once they became involved with the school, they helped connect other business partners, including the establishment of the student-run bank with Middleburg Bank, to help students learn financial literacy. Worldgate donated to the STEAM initiatives at Aldrin and Worldgate employees speak at the school's Career Day about jobs in educational software.
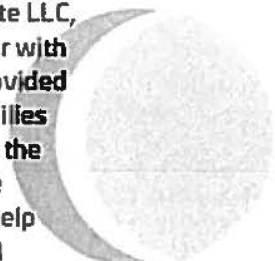
Growth | Community | Community Challenges

Additional. Thought-starters on potential partnerships to tackle community challenges, including the pockets of poverty challenge mentioned above and others

Northern Virginia, like any region with diverse and vibrant population growth, is faced with pressing social challenges. We know you are committed to being an active and supportive member of the community. Following up on our conversations during the site visit, we have developed a few thought-starters on ways to partner to tackle three primary issues – persistent pockets of poverty (discussed in the previous section), housing affordability (discussed in an earlier section), and mental health and substance abuse. We are particularly enthusiastic about partnering with you to implement inventive solutions.

Economic gains and broad-based growth in our region over the last few decades often masks the challenges that affect certain segments of our populations more acutely and disproportionately than others.

Despite having a relatively low (6%) poverty rate, this still means there are roughly 140,000 people living in poverty across our region. As mentioned previously, 18 of our neighborhoods have unemployment rates above 10% and 18% of neighborhoods have poverty rates of 10% or higher.

Short-term partnership opportunities	• **Advise and support** the Community Foundation of Northern Virginia on its new Opportunity Index designed to provide policymakers with granular, actionable data on the persistence of poverty in our region • **Invest** in the Community Wealth Building Initiative, led by local business leaders and community organizers, aimed at lifting the "hard-to-employ" segment of our workforce out of poverty • **Encourage** employees to participate in volunteer programs offered by each of our jurisdictions (e.g., the Arlington Foundation's Bridges Out of Poverty initiative), linking them with poverty-focused volunteer opportunities at over 50 community organizations working on these issues
Long-term partnership opportunities	• **Advise and support** the work of Connect Northern Virginia, an online database aimed at making human services information accessible to those affected by poverty, as well as the organizations and agencies working to support them • **Launch** a foundation focused on addressing the persistence of poverty in neighborhoods throughout our region • **Leverage** existing Amazon programs like amazonsmile to raise funds in the community supporting targeted programs and organizations

Housing affordability

One of the most critical social challenges faced by our region is the preservation and development of affordable housing developments, especially for our most vulnerable residents. We believe there are several ways in which our existing work (e.g., housing master plans, centralized access systems, and comprehensive homelessness and eviction prevention services) could benefit from a strong partnership with Amazon.

Short-term partnership opportunities	Amazon could play a significant role by investing directly, indirectly via a local or national foundation (e.g., Enterprise Partners), or in partnership with a third party (e.g., Bank of America or Boston Capital) in the following: • **Income-restricted housing** (i.e., eligible for low-income housing tax credits) • Any of our communities' **housing investment funds**, which are in need of investment and often the main sources of financing for affordable housing
Long-term partnership opportunities	In addition to investing resources (discussed above), we envision other opportunities where you could take leadership roles: • Use your unique position to **engage in policy and planning discussions**, working with organizations like the Urban Land Institute and the American Institute of Architects • Launch an **independent affordable housing fund**, working with local foundations which could handle administrative issues and create a tailored fund set up for you • **Invest directly in housing** designed for employees, allowing them to live close to the headquarter campus or to easily access the campus via public transit

Mental health and substance abuse

Communities across the country have seen a significant rise in opioid-related overdoses and deaths, drawing increased attention to mental health challenges in general. Northern Virginia has not been immune from these challenges. While our region is committed to reducing stigma and improving access to care for people with mental health and substance use disorders, there is a severe shortage of treatment services and programs. We are excited about partnering with you to bolster our efforts to address these issues. A few thought-starters on how Amazon could get involved include:

Short-term partnership opportunities	• **Use cutting-edge, cloud-based technology expertise** to support our ongoing effort to develop region-wide data sharing capability and efficiency to identify and systematically address opioid use trends • **Fundraise for existing local government or non-profit** (e.g., Phoenix House or Volunteers of America) efforts • **Encourage employees to join in local volunteer programs** that connect individuals directly with non-profits in need of one-time or long-term volunteer assistance.
Long-term partnership opportunities	• **Work with local governments** to develop new substance abuse awareness programs targeting youth and school-age populations • **Actively partner with regional commissions** currently working to identify targeted policy changes that could improve our ability to effectively address these issues • **Offer assistance and support to local health initiatives**, such as Arlington's Destination 2027 initiative. These initiatives involve utilizing survey data, regional health data, and insights from other assessment tools to identify and implement solutions

Growth | Community | Community Challenges
A.2.c. Describe what your community has done to support veterans and disabled in healthcare, housing, and
employment. Describe success metrics for such efforts.

More than 120,000 veterans live in Northern Virginia.

We are a prime destination for former members of the military because many employers see the mutual benefit of taking advantage of the skills these men and women developed in the service. Furthermore, 18,000 people every year leave Virginia military bases seeking civilian employment. The veteran community is a deep, long-standing segment of Virginia's economic and cultural fabric. Because of the significant role they plan in our economy, and because the community feels strongly about saluting those who have served our nation, Northern Virginia has a high level of services and programming aimed at veterans. As part of the strong network of veteran support services in the Northern Virginia region, both private non-profits and government agencies in Alexandria provide wide-ranging services to meet the unique needs of our community's veteran population.

Veterans thrive in NOVA, with higher average educational attainment, higher median income, and lower poverty rates than the national veteran population, overall.

Level of action	Details
Healthcare	As part of the Washington, D.C., metropolitan area, Northern Virginia offers a robust network of healthcare services that targets veterans and their families: • Veterans and active-duty National Guard and Reserve members can take advantage of Tricare centers at Fort Belvoir in Fairfax County and Fort Myer in Arlington County, as well as in other locations off-base. Both Walter Reed National Military Medical Center, a short drive away in suburban Maryland, and the Fort Belvoir Community Hospital are well-known for their advanced treatment of wounded warriors. • For mental health needs, locations such as Neighborhood Health, a federally-qualified health center in Arlington, and the Alexandria Vet Center offer a range of social and psychological services to our veterans. Rehabilitative therapy is also a focus throughout the region. For instance, organizations such as Bridle Paths, Project HORSE (equine therapy), and Veterans Moving Forward (provides service dogs for veterans with physical and/or mental challenges) deliver innovative services to support and care for our veterans.

Housing

Northern Virginia has a range of services focused on veterans' housing.

- **Financial support programs** and direct services target veterans of all backgrounds and walks of life. For instance, Hero Homes is a nonprofit in Loudoun that builds houses (among other services) for those who have fought for our country.

- **Housing services and programs targeting disabled veterans** can be found across Northern Virginia. Examples include programs such as Alexandria's full real estate tax exemption, available to any veteran who has a 100% service-connected, permanent and total disability.

- **For homeless veterans**, Northern Virginia has been extremely active and seen success in tackling this issue. Arlington, for example, joined other NOVA counties and jurisdictions around the country in an effort to tackle veterans' homelessness, with Arlington effectively ending homelessness for military veterans in 2016.

Employment

Virginia's state government created the Virginia Values Veterans Program, a free training and certification program to help employers implement nationally-recognized best practices in recruiting, hiring, and retaining highly skilled and dependable veterans.

Other regional efforts include the following:

- **Community Business Partnership** that houses one of just 15 Veterans Business Outreach Centers, supporting veterans in developing business programs

- **Northern Virginia Technology Council's Veterans Employment Initiative,** aimed at accelerating veterans' transitions to civilian life by providing better employment opportunities within Virginia's technology community

- **SkillSource Group** is a Northern Virginia workforce development program that works with partners to offer individualized career counseling to veterans, including training, job search assistance, and small business development

Success measures
Typical success metrics include measurements of the number of veterans served (e.g., how many veterans received patient care services, number of veterans placed in jobs), satisfaction (e.g., participant surveys), sustainability (e.g., number of veterans in stable housing six months after program participation), and impact (e.g., average wages, number of companies created, and annual sales revenues of veterans-founded companies).

Other category-specific measures include the following:

- **Healthcare:** These measures include access to primary care, prevalence of health screenings, and direct patient outcome measures.

- **Housing:** Specific measures include percentage reductions in chronic homelessness among veterans, number of veterans placed in temporary shelters and permanent housing, prevention of homelessness through emergency financial assistance.

- **Employment:** These measures include the number of employers engaged in veterans efforts. For instance, Virginia Values Veterans Program has certified nearly 500 employers across the Commonwealth, resulting in more than 31,000 veterans hires).

Northern Virginia's deep commitment to fairness and equality extends to its pursuit of inclusion for residents with disabilities.

Through policy, publicly-funded programs and services, and grassroots efforts initiated by private businesses and organizations, Northern Virginia strives to deliver the same high quality of life to our residents with disabilities.

Level of action	Details
At a policy level	Counties throughout Northern Virginia have dedicated staff and resources to this effort. For example, Alexandria's Office of Human Rights provides staff and support to the Alexandria Commission on Persons with Disabilities (ACPD), which focuses issues facing our residents with disabilities including transportation, accessibility, housing, employment, and public awareness. Similarly, Loudoun County maintains a Disability Services Board (DSB) that acts as an at-large advisory body appointed by the Board of Supervisors to provide input on making Loudoun an accessible and inclusive community for all people.
At a programs level	Northern Virginia offers a wide array of services that cover all types of needs – physical, mental, emotional, and behavioral. For instance, Fairfax-Falls Church Community Service Board (CSB) provides support services for people of all ages who suffer from mental illness, substance use disorders, and/or developmental disabilities. The CSB also provides early intervention services for infants and toddlers who have developmental delays. For the elderly, counties such as Arlington offer specialized services such as adult day care and home visits by nurses, with a special emphasis on access for those in poverty.
At a grassroots level	A range of organizations provide targeted, expert care for individuals across the spectrum of disability. For instance, for those suffering with addiction, services such as Crossroads, a residential substance abuse treatment/rehabilitation program in the Kingstowne area serves adults with substance use disorders or co-occurring substance use and mental health disorders. Similarly, New Generations is a residential treatment program in Vienna that supports women who have a substance use disorder and/or co-occurring substance use and mental health disorders.

Category	Details
Healthcare	Northern Virginia provides healthcare services to those with disabilities ranging from emergency hotline services (e.g., Fairfax County's emergency hotline for those in crisis, including those in need of mental health or detoxification services), direct services (e.g., Loudoun's case management services and support groups for adults and children with acquired or traumatic brain injuries), and therapeutic recreation for those with disabilities (reviewed in the recreation section of the RFI response).
Housing	The Northern Virginia Regional Projects Office, through the Virginia Department of Behavioral Health and Developmental Services, launched the Housing and Supportive Services (HSS) initiative to increase access to and availability of integrated and independent housing options for eligible individuals with a developmental disability. The program provides funding for temporary rental assistance, non-reimbursable environmental modifications, or non-reimbursable assistive technology improvements, as well as funding to maintain current housing, such as emergency rent, utilities, or repairs. Individuals with intellectual disabilities as well as those with development disabilities such as autism, cerebral palsy, spina bifida, and other disabling conditions are eligible. Other programs include tax relief programs (e.g., Alexandria's Real Estate Tax Relief Program for the Elderly and Disabled), and residential options for the elderly and disabled.
Employment	Counties across Northern Virginia offer a range of employment services to improve education, training, and employment opportunities and outcomes for youth and adult residents with disabilities who are unemployed, underemployed, and/or receiving Social Security disability benefits. The Virginia Department of Rehabilitative Services (DRS), for example, works with citizens throughout the NOVA region to find and maintain employment while also offering disability-related services to other community organizations and local businesses and transition services to students in county schools. Similarly, a number of public and private programs exist to ensure our residents with disabilities have employment opportunities. Two public examples include the Fairfax County Community Services Board's Intellectual Disability Services Division, which operates as a cooperative employment program to provide on-the-job training for persons with intellectual disabilities, and Arlington's full-time Disability Employment Coordinator at the Arlington Employment Center who is responsible for supporting the "skilling-up", credentialing, and placement of this particular talent pipeline. In the private sector, ServiceSource Inc allows disabled job seekers to "try out" a job in addition to providing other support for employees with disabilities. The program offers highly individualized job development, job coaching, and on-the-job training, focusing on skills, appropriate employee behavior, and long-term follow-up to ensure job retention. It also provides guidance on how to use public transportation to get to and from work.

Typical success metrics include the number of residents with disabilities served (e.g., how many residents with disabilities received patient care services, number of residents with disabilities placed in jobs), satisfaction (e.g., participant surveys), sustainability (e.g., number of individuals receiving long-term, ongoing care), and impact (e.g., number of individuals placed in jobs). Other category-specific measures include the following:

- **Healthcare:** Traditional patient outcome metrics on the quality of services delivered
- **Housing:** Share of population needing housing assistance who receive it
- **Employment:** Number of program participants placed in jobs

In addition to services provided, customer satisfaction surveys speak volumes about the quality of life offered to the residents. In Fairfax County, 91% of residents said they have options to support their physical, behavioral, and cognitive needs, while 82% of residents with disabilities report being able to participate in meaningful and accessible activities of their choice.

B.1. Describe the diversity and inclusion programs that are in place with your leading employers and school systems. Describe any legislation at the local or state level on diversity and inclusion.

It's our differences that make us great.

As one of the most diverse regions in the country, a critical part of Northern Virginia's economic competitiveness rests on the diversity of its talent base and residents. Recognizing NOVA's strong and diverse labor pool, world-class companies continue to call NOVA home and add to a culture that welcomes all individuals, no matter their race, nationality, religion, sexual orientation, or ability.

Northern Virginia's employers are national leaders in creating welcoming and supportive environments for their employees. In fact, numerous NOVA companies are included on Forbes' 2018 list of America's Best Employers for Diversity.

Virginia's headliners in Forbes' 2018 America's Best Employers for Diversity

leidos
- Extensive four-pronged Diversity Talent Acquisition and External Partnership strategy: acquire talent (both campus and veteran outreach efforts), showcase employment brand, demonstrate commitment to community, and professional development
- Broad array of employee resource groups (over 3,000 employees participating) and engagement efforts focused on three critical areas: workforce, workplace, and marketplace

Capital One
- C-suite prioritization through Chief Diversity and Inclusion Officer
- Host of associate networking groups (e.g., African American Network, CapAbilities Network, LGBT Network, and Military Network, among others)
- Range of connection groups (e.g., Adoption Connection, Autism Spectrum Connection, Virtual Team Connection, Parent Connection)
- Supplier diversity efforts

GENERAL DYNAMICS
- Diverse set of partnerships to promote industry opportunities for a diverse workforce, including National Society of Black Engineers (NSBE), Society of Women Engineers (SWE)
- Specific group initiatives – DisAbility to enhance ability to attract and retain talented individuals with disabilities; Veteran Connection Focus Group to support employees who have served our country

SAIC
- Inclusion and diversity initiatives fall under MOSAIC program that celebrates and embraces its employees' diverse perspectives and life experiences
- Employee business resource groups span interests and affiliations (e.g., Military/Veterans BRG; Millenial BRG; Women's BRG; Equality Alliance for LGBT community)

NORTHROP GRUMMAN
- Operation IMPACT program hires and mentors nation's wounded warriors
- GlobeSmart effort includes coaching, self-assessments, and workshops that raise cultural awareness and builds cross-cultural competencies for all employees
- Range of Employee Resource Groups (12 ERGs with 220+ chapters), heritage events, and supplier diversity efforts

Hilton
- Supplier Diversity and Ownership Diversity efforts to promote diversity in supplier ranks and development of property ownership opportunities among women and minority entrepreneurs
- Industry-leading team member benefits (e.g., parental leave, adoption assistance, GED assistance) supporting personal and professional growth
- Quarterly reporting of team member metrics to highlight inclusion and diversity opportunities

NAVY FEDERAL
- Extends eligibility for membership to same-sex partners
- Has a written anti-discrimination policy that includes sexual orientation
- Parents (birth and non-birth) in same-sex relationship can take full parental leave
- Medical benefits include gender identification and gender confirmation surgery
- All job postings list sexual orientation in the company's EEO policy

Virginia companies are regularly recognized as the best places to work...for everyone.

This inclusive push extends beyond race and nationality where 12 NOVA-based companies earned a top score of 100% and the distinction of "Best Places to Work for LGBTQ Equality" in the Human Rights Campaign Foundation's 2018 Corporate Equality Index (CEI).

BAE SYSTEMS INSPIRED WORK	• Hosts OutLink, which promotes equality through education for LGBTQ employees and their allies • Support starts at the top with Sir Roger Carr, Chairman of BAE Systems, who will be a featured speaker at the 2018 Pride and Prejudice Conference, a global event to educate and catalyze debate on the costs of LGBT discrimination
Booz | Allen | Hamilton	• Founded the GLOBE Forum to provide critical conversation space and resources for their LGBTQ employees and allies • Has an LGBTQ program that reaches out to LGBTQ millennials through intersectional STEM recruitment • Includes healthcare benefits for transgender employees that include coverage for gender reassignment surgery and hormone therapy • Efforts such as these have earned the company a perfect score from CEI for eight years in a row
CapitalOne	• Active financial supporter of LGBTQ initiatives including the Capital Pride Alliance Parade and Festival, led $10.3M financing of San Francisco's LGBT Center renovations, and provided space and support for the launch of "Virginia Competes," engaging corporate America to advocate for the LGBTQ- inclusive laws and policies • Supports employees and their families through the Out Front LGBTQ Business Resource Group
Freddie Mac	• Supports employees and families through the Pride Employees Resource Group • Encourages entire community to stand for inclusivity, including providing organization-wide "Safe Space" cards that state "LGBTW I'm an Ally" to foster a sense of safety and community • Supports and attends networking events such as the NAGLREP (National Gay and Lesbian Real Estate Professionals) LGBT Housing Policy Summit in Washington, D.C.
GANNETT	• Pride Forward is an employee resource group driven by and for employees for the LGBTQ/A workforce across the Gannett family of companies • Supports the LGBTQ community by offering space and support for conferences and events such as the Northern VA SHRM conference, "LGBT Diversity and Sensitivity in the Workplace" • Publications are recognized for their coverage and support of LGBT issues, which are designed to spark debate and education

Hilton

- The "Stay Hilton, Go OUT" program coordinates with global LGBT events calendars to provide special discounts at nearby Hilton properties during the events. Program also offers several packages with combinations of reduced rates, free Wi-Fi, free breakfast, complimentary drinks, double points, spa discounts, and a free subscription to OUT magazine
- Provides and requires LGBTQ sensitivity training for all staff and has in place employment policies that specifically list LGBTQ as a non-discrimination group
- Ran a full-page ad in *Travel and Leisure* featuring two men in the same bed. The ad drew criticism from anti-gay groups, however, Hilton adamantly stands behind this ad and others that promote inclusion

leidos

- Has a Pride Employee Resource Group that fosters an understanding of and support of LGBTQ issues and workplace needs
- Has an EEO and Affirmative Action policy that specifically identifies sexual orientation and gender identity as protected by the company's discrimination guides
- Supports the LBGTQ STEM professionals recognition awards

NORTHROP GRUMMAN

- Has an Employee Resource Group for the LGBT employees and has specific LGBTQ employee retention strategies in place
- Is a corporate partner in the National LGBT Chamber of Commerce
- Includes an LGBT Certified Group in its Supplier Diversity Policies

Rolls-Royce

- Has an employee resource group, PRISM, for the LGBT workforce community
- Lists sexual orientation and gender identity on their job postings as protected by the company's anti-discrimination policies
- Is a sponsor of LGBTQ Pride events around the world, and donates luxury cars to drive VIP guests when needed

TEGNA

- Is considered an employer of choice by the National Organization of Gay and Lesbian Scientists and Technical Professionals
- Was recognized by GLAAD, a group that tracks the presence of LGBTQ characters on television, for promoting honesty in reporting, as well as supporting programming with LGBT characters
- Has a written statement identifying inclusiveness as a corporate policy

Volkswagen

- Is recognized in the LGBTQ Community's Guide to Engineering as an employer whose workplace policies specifically support inclusion
- Was recognized for its focus on diversity and inclusiveness in marketing by LGTBQ consumers in a survey done by Marketing Daily in 2017
- Has a written policy on its commitment to "creating an environment where each person feels respected and appreciated"

Willis Towers Watson

- Is a member of myGwork, an LGBT+ employment platform
- Hosts and attends LGBT+ college career fairs
- Sponsors its employees to allow them to attend LGBT+ conferences

Northern Virginia's school systems are comprised of a diverse community of students from over 100 countries.

This diversity is certainly a strength and a priority for each school system.

Alexandria City Public Schools (ACPS)	Alexandria City Public Schools (ACPS) provides a high-quality, responsive education for all students in our school system to achieve the goal that every student succeeds. ACPS has adopted policies for nondiscrimination for students and employees based on race, national origin, disability, religion, gender, gender identity, gender expression, sexual orientation or marital or parental status. The School Board's strategic plan, ACPS 20/20, includes goals that promote the presence of an inclusive organizational culture where every student is afforded the opportunity to develop habits and attitudes that reflect the principles of cultural inclusiveness, civic responsibility, and ethical and respectful behavior. To achieve this goal, the ACPS 20/20 Strategic Plan outlines objectives to inform educators' commitment to cultural competence and building an atmosphere of mutual respect in every school. This is in addition to ensuring the implementation of a rigorous curriculum and a range of school and community service opportunities that promote civic engagement.
Arlington County Public Schools (ACPS)	ACPS follows a range of school policies that focus on celebrating and protecting the diversity of our student body, such as including gender identity and expression in its nondiscrimination policies for hiring teachers and other employees and a commitment to create a safe, caring, respectful learning environment for all students. For instance, ACPS's bullying policy prohibits targeting individuals based on gender, sexual orientation, gender identity, and expression. This policy affirms ACPS's policy to allow students to utilize neutral or staff facilities or facilities that correspond to the gender with which they identify.
Fairfax County Public Schools (FCPS)	LGBTQ rights and protections are of great importance in Fairfax County. Our Board of Supervisors and Fairfax County Public Schools (FCPS) have taken several actions in this area: Updated County policies to add 'gender identity' as one of many protections for employees, applicants, clients or customers, volunteers and visitors. • Issued a proclamation designating October 2017 as LGBTQ History Month for FCPS • Increased outreach by our Office for Women & Domestic and Sexual Violence Services to victims who identify as LGBTQ, as well as improvement of prevention measures in this community • Changed FCPS policies in 2014 to ban discrimination against gay and transgender students and staff. Policies were revised in 2015 to include protections for 'gender identity.' This policy was successfully defended in court and upheld • Supports an active FCPS Pride group

Loudoun County Public Schools (LCPS)

Loudoun County's schools received an "A" rating on diversity from Niche.com, which ranks it in the 88th percentile for most diverse school districts in the U.S. As the population has grown larger and more diverse since 2000, Loudoun County Public Schools have made a concerted effort to not only embrace the diversity in its student body, but to also hire staff that more closely match the changing demographics of the population.

Going one step further, the system also invested in training its staff to be more culturally aware, hiring consultants in 2016 to conduct 21 training sessions for 500 administrators (principals, deans, department heads) on how to recognize and address their own biases. Other training sessions also teach staff how to prepare students for working in a global workforce, where they will work with people of diverse backgrounds.

"We've been very transparent about this. We have a very diverse student body, and our goal is to continue to diversify and have that reflected in our licensed employees, our teachers, and our administrators, who are role models for our students."

- **Asia Jones**
  Human Resources Director
  Loudoun County Public Schools

We the people, all the people.

In 1786, the Virginia General Assembly enacted Thomas Jefferson's Statute of Religious Freedom, enshrining equal protection for all individuals regardless of their religious beliefs and providing an early model for the First Amendment. Though Virginia, like all states, has a complex past, this tradition of working towards as an inclusive, open, and welcoming society for people of all backgrounds is still an integral part of our civic tradition.

Since the last half of the 20th century, Virginia has made significant strides in protecting the rights of and improving treatment for all of its citizens.

Virginia's Human Rights Act, passed in 1987, was one of the first of its kind in the country. Its purpose is to protect all individuals in the Commonwealth from discrimination on the basis of race, color, religion, national origin, sex, pregnancy, childbirth or related medical conditions, age, marital status, or disability.

In more recent years, Virginia has continued to work to protect the rights and wellbeing of all Virginians, including women, minorities, the LGBT community, immigrants, and ex-felons.

The following items represent a sample (i.e., list is not comprehensive) of recently-passed or proposed legislation or executive actions affecting members of each of these groups.

General	• In 2018, Governor Northam's first executive order continued Governor McAuliffe's policy of prohibiting discrimination against all individuals on the basis of race, sex, color, national origin, religion, sexual orientation, gender identity or expression, age, political affiliation, or against otherwise qualified persons with disabilities
	• Unlike other southern states, Virginia has consistently defeated legislative attempts to define access to public facilities, specifically restrooms, for transgender individuals
Immigrants and refugees	• In 2014, Virginia Attorney General Mark Herring determined that Deferred Action for Childhood Arrivals (DACA) recipients would be eligible to receive in-state tuition under Virginia law
	• Virginia has consistently reaffirmed its commitment to receiving and welcoming refugees from around the world. From 2013-2017, Virginia welcomed nearly 7,000 refugees from over 35 countries. During this time, the Refugee Resettlement Program oversaw services to an additional 7,300 refugees. Northern Virginia, Harrisonburg, and Charlottesville are among the top refugee destinations in the Commonwealth

Formerly incarcerated individuals	• In 2018, Governor McAuliffe signed an executive order banning state agencies from asking about prospective employees' criminal histories at the initial application stage
	• By the end of Governor McAuliffe's term in January 2018, Virginia had restored the voting rights of more than 173,000 Virginians previously convicted of a felony, more than any state in the country
LGBT community	• Shortly after the Supreme Court legalized same-sex marriage in Virginia in 2014, Governor McAuliffe issued a directive to all state agencies clarifying that all same-sex couples would receive and be able to participate in all state-provided social services programs
	• Virginia has never had a law prohibiting qualified single individuals or married couples from adopting or participating in the foster care system
	• In 2016, the Virginia General Assembly passed and Governor McAuliffe signed a law allowing individuals to easily change the gender on their birth certificates or on the death certificates of a loved one
	• In 2016, Virginia's Attorney General, Mark Herring, produced an advisory opinion stating that the Virginia Human Rights Act prohibition against employment discrimination based on 'sex' inherently included a prohibition on employment discrimination for sexual orientation and gender identity, as well
Residents with disabilities	• In 2015, Governor McAuliffe issued an executive order aimed at expanding training opportunities to further accommodate and integrate individuals with disabilities into the Commonwealth's workforce

Diversity, equality, and inclusion are our core values.

In the aftermath of the violence in Charlottesville in August 2017, Governor McAuliffe issued an executive order to establish the Commonwealth Commission on Diversity, Equity, and Inclusion. The executive order noted that Virginia is "home to people from every race, ethnicity, sexual orientation, and gender identity" and that "diversity is an essential element of what makes Virginia a great place to live, work, and raise a family." Despite the diversity of its people, Governor McAuliffe also noted that "like much of the nation, the Commonwealth has an unreconciled relationship with its past" and that there remains "much work to do to confront hatred, bigotry, and violence."

The Commission was specifically tasked with identifying policy changes to promote diversity and inclusion, creating partnerships with public and private sector entities that aim to strengthen commitment to these ideals, and identifying factors that lead to extremism and division and designing specific strategies to combat this trend.

The Commission will work to honestly and transparently confront Virginia's past and identify solutions, issuing a full report by November 2018.

The localities in Northern Virginia are also taking a proactive approach to inclusion in their communities.

For instance, NOVA Pride cultivates and grows a coalition to educate, advocate, and celebrate the LGBTQ community and allies in Northern Virginia. On a school level, Safe Space NOVA is an organization dedicated to supporting LGBTQ high school students in the Northern Virginia community by providing a safe, accepting, and supportive environment to combat social stigmas, bullying, and other challenges.

Alexandria   The Alexandria Office of Human Rights was established to combat discrimination, increase equal opportunity, and protect human rights for persons who live, work, or visit in Alexandria. The Office enforces the Alexandria Human Rights Code, passed in 1975 as one of the first local human rights laws in Virginia, by receiving and investigating complaints of discrimination under the Code and applicable federal and state laws.

Alexandria adopted a statement of Inclusiveness in 2006 following national discussion about immigration, followed by a more robust one in 2016. Alexandria City Council's November 2016 statement affirmed Alexandria as an inclusive community.

Recognized by Human Rights Campaign's Municipal Equality Index

Arlington   In 2014, the real estate guide website, Movoto, named Arlington #1 Best Town in Virginia for LGBT Families. The Human Rights Campaign gave Arlington, VA a total score of 93 out of 100 in 2017 for enacting laws, policies, and services that support LGBTQ residents and visitors. Since 1999, Arlington's Human Rights Commission has awarded its James B. Hunter award each year to individuals, community groups, nonprofit organizations and business establishments that promote cultural diversity and equal rights for all residents. Arlington County also celebrates June as LGBTQ Pride Month.

Diversity and inclusion are the foremost commitments in Arlington County's Vision Statement:
> "Arlington will be a diverse and inclusive world-class urban community with secure, attractive residential and commercial neighborhoods where people unite to form a caring, learning, participating, sustainable community in which each person is important."

Recognized by Human Rights Campaign's Municipal Equality Index

Fairfax County   In 2017 the Fairfax County Board of Supervisors and the Fairfax County School Board adopted the One Fairfax resolution on diversity and inclusion, affirming the County's strong commitment to maintaining a community culture that values and celebrates both similarities and differences among of all residents.

Chairman Sharon Bulova states, "Fairfax County is a welcoming and accepting community where residents of all backgrounds deserve to feel respected and safe."

Loudoun County

The Loudoun County Multicultural Advisory Commission works with a diverse cross-section of community partners in order to provide advice on multicultural issues and to create a greater awareness and understanding of cultural diversity in Loudoun County.

In 2015, the Town of Leesburg established a Diversity Advisory Commission in order to foster diversity and inclusion within the town government workforce and community. The commission, which was established with the help of the local chapter of the NAACP, works to connect low-income and minority communities with helpful resources in the community.

More than 25% of the people living in Northern Virginia were born outside the U.S.

These residents represent 120 different countries and are active contributors to the cultural richness and economic vitality of the region. More specifically, Greater Washington is home to the densest concentration of Ethiopian and Salvadoran immigrants and the fourth-largest Indian immigrant population in the U.S. (behind NYC, Chicago, and San Jose).

County	% Foreign-born
NOVA	27%
Arlington County, Virginia	23%
Fairfax County, Virginia	30%
Loudoun County, Virginia	23%
Prince William County, Virginia	23%
Alexandria City, Virginia	28%
Fairfax City, Virginia	28%
Falls Church City, Virginia	16%
Manassas City, Virginia	28%
Manassas Park City, Virginia	33%

Top 10 countries of origin for foreign-born residents

County	% of total NOVA immigrants
El Salvador	12.00%
India	8.90%
Korea	6.20%
Vietnam	5.10%
China	4.50%
Bolivia	4.00%
Philippines	3.80%
Honduras	3.40%
Ethiopia	3.30%
Pakistan	3.30%

Source: American Community Survey

B.3. Describe programs that you have in place that build community for immigrants and assist with family integration (e.g., programs around language, culture, legislation, housing, finance).

We pride ourselves on the diversity of our community.

The broader D.C. metro area, including Northern Virginia, consistently receives recognition for its policies, programs, and support of its immigrant community. For instance, a recent WalletHub survey ranked the D.C. area as having the 6th highest economic impact from immigrants. This study also highlighted the impact of international students on the D.C. area, noting that Washington D.C. had the highest percentage of jobs created by the presence of international students.

Northern Virginia, in particular, is home to a broad array of programs focused on ensuring immigrants find a safe, supportive, and connected community.

Program type	Overview
Family support	A broad array of services is offered by public and nonprofit entities. Public entities, such as the Northern Virginia Family Service, focus on early childhood development, foster care and adoption, homelessness and housing, health and well-being, immigration legal services, mental health, youth initiatives, and workforce development.
	Child and Family Network Centers in Alexandria provide bilingual preschool education to low-income children, equipping them with the tools they need to succeed in school and in life. While not a program developed specifically for immigrants, during the 2016-2017 school year 119 students from 25 countries speaking 13 languages attended its preschools across Alexandria. Bilingual social workers support parents as they work toward self-sufficiency and gain parenting skills to support their children's education.
	Arlington's Community Outreach Program promotes self-sufficiency and community belonging through neighborhood educational programs and services for newly arrived and low-income County residents. Five centers are strategically located in low-income neighborhoods with high concentrations of immigrants. Programs include citizenship classes and workshops, English classes, computer classes, job readiness training, financial planning classes, food and nutrition classes, and health screenings and presentations.

Program type	Overview
Education support	A wide range of services are offered to parents and families through partnerships with the Ethiopian and Eritrean Education Alliance, which helps families understand difference between education abroad and in America; Amigas de la Communidad, a grassroots community advisory board, provides support around housing, employment, healthcare, childcare, and education to disenfranchised, Spanish-speaking families living in poverty; and SCAN of Northern Virginia, a network of bilingual parent support groups to help support and encourage parents-especially those new to the United States
Resettlement programs	The City of Alexandria's Workforce Development Center (WDC) has an on-site partnership with Catholic Charities Diocese of Arlington Migration and Refugee Services to offer the "Breaking the Barriers" program. BTB is a federally-funded, state-administered employment program with the goal of self-sufficiency. Refugees can participate in the BTB program for up to five years after their arrival and may receive case management, employment services, and referrals for training (vocational and ESL). The Global Center for Refugee Education and Science takes a data-driven approach to developing intensive language training programs wrapped in a holistic support approach (e.g., childcare, transportation, and learning materials provided) to break down barriers to language learning and refugee integration.
Adult skill program	**Professional skills development:** WDC's Business Services Team facilitates an annual Skilled Immigrant Workforce Conference held at Northern Virginia Community College, geared towards professionals who were educated outside the United States who are struggling to find a job in their profession. They are provided with the resources needed to guide them in the right direction and are given the opportunity to find out about certification and licensing procedures in the United States. **Literacy and English language courses:** Numerous programs are offered by public and nonprofit organizations such as the Literacy Council of Northern Virginia (LCNV) that serves low-literacy and limited English language proficient adults with a selection of low-cost, moderately intensive courses to help them transition into the workforce or other educational opportunities.
Other programs	**Legal:** Just Neighbors, a nonprofit dedicated to providing legal services to the immigrant community of Northern Virginia, fosters mutual understanding between immigrants and the larger community in which they live. In 2017, Arlington's County Board authorized a new $100,000 contract to provide additional immigration legal aid services to Arlington residents, and launched a new website to provide information and link immigrants to important resources.

B.4. Describe what your community has done to encourage STEM professional development in your immigrating and minority populations.

All skills are welcome.

Northern Virginia, home to one of the most diverse communities and the most highly educated immigrant populations in the country, truly understands the value that its immigrant and minority populations bring to the community. Efforts at all levels of government and institutions are underway to encourage STEM professional development specifically for these two populations.

From K-12 to higher education to workforce development initiatives, Northern Virginia is hard at work to ensure the region maximizes the value of every member of its community. We summarize a few key strategies below, but to review additional details on how we are expanding access to STEM programs to underrepresented groups, please see our response to Question A.2c in the Talent section.

- Family and K-12
- Higher education
- Workforce initiatives

Northern Virginia believes that aspiring scientists also need adults who have the skills (e.g., literacy) to be supportive and representative role models to encourage young children to enter STEM professions.

Efforts throughout our school systems focus on outreach to families and the broader community to raise awareness of STEM opportunities while also ensuring our students are able take advantage of these resources.

- **Integrating families into the schooling process:** Adult literacy and cultural integration programs previously mentioned such as the Ethiopian and Eritrean Education Alliance and Amigas de la Communidad work to ensure parents can support their budding engineers and scientists from day one in the school system.

- **Showcasing representative role models:** Programs like Alexandria City Public School's Family and Community Engagement provides a strong series of STEM professional development opportunities for immigrants and minority families and students, including the Noche de Ciencias Program cosponsored with the Society of Hispanic Professional Engineers to provide hands-on STEM activities for Spanish-speaking and other underrepresented communities.

- **Providing intensive STEM programs that expose and prepare underrepresented students for STEM careers:** Programs like the Global STEM Grand Challenges program at Edison High School in Fairfax County, where 43% of the participants are either Hispanic or African-American, ensure underrepresented minorities have the support and resources needed to excel. This program, for example, provides an intensive, three-year interdisciplinary approach to learning STEM and cultivating a passion for future STEM careers.

We know that college can be tough, especially for STEM majors working through difficult coursework, new social environments, and sometimes uncomfortable social and cultural challenges.

Efforts underway at our higher education institutions are designed to attract and support target populations throughout their educational journey.

- **Community college:** Programs such as the Northern Virginia Community College's Assisting Females in Technology (aFit) support underrepresented groups in completing their studies and entering the workforce. Specifically, NOVA's aFIT program includes partners from various sectors, college administrators, school districts, female practitioners and professionals, business and industry, non-profit organizations, local interest groups, and other community organizations, with a concerted focus on assisting women in information technology as vital to the future of technological innovations and global competitiveness.

- **Affinity groups:** Social and professional groups at our region's top universities ensure that future engineers of all races and ethnicities find the support, representation, and guidance that is so critical to ensuring students complete their studies on time and, more importantly, find fulfillment in their educational and professional experiences. George Mason University's School of Engineering, for example, is home to the Louis Stokes Alliance for Minority Populations (LSAMP), National Society of Black Engineers (NSBE), Society of Hispanic Professional Engineers (SHPE), and Society of Women Engineers (SWE).

- **Scholarship programs:** Universities across Northern Virginia, and the Greater D.C. region, have committed significant time and attention to ensuring that talented individuals from all corners of the community have the opportunity to study at our universities. Scholarship programs like GMU's Xerox Technical Minority Scholarship Program ensure students have the financial resources needed to complete their studies in specific fields like computing and computer science, laser optics, and engineering.

It is important to also give credit to universities in our neighboring jurisdictions as well.

The University of Maryland, especially its Baltimore County campus, has excellent outreach and support programs for targeted groups. Similarly, Howard University's efforts educating the next generation of black engineers and scientists continues to produce high-quality graduates ready to leave their mark on the world.

School	Example programs
University of Maryland Baltimore County	- Meyerhoff Scholars Program – the nationally-recognized scholarship program has created a community of over 1000 diverse alumni studying and practicing in STEM fields around the world - Center for Women in Technology Scholars – the merit-based scholarship program for talented undergraduates majoring in computer science and other engineering fields provides resources, mentorship, and community to its scholars - Y5 Cyber Scholars and Associates – the program, started by a $1M grant from Northrop Grumman, aims to increase the participation of women and underrepresented groups in the fast-growing field of cybersecurity
Howard University	- Bison STEM Scholars Program welcomed its first round of scholars in Fall 2017. Modeled after the UMBC Meyerhoff Scholars Program, the BSSP focuses on providing students with mutual support and mentorship and also reinforces critical thinking skills to enable participants to become global leaders - K-12 outreach efforts include the Howard University Middle School of Math and Science (a 6th-8th grade charter school), Ambassadors of Engineering Program, and NFTE Global Girls Entrepreneurship Tech Business Camp

We know that many immigrants bring a wealth of skills and experiences to our country and our region.

Programs across our community ensure that residents from all backgrounds and with all skill levels have the support and resources to put their skills and experiences to best use.

- **Skilled immigrant conferences:** Northern Virginia Community College holds occasional conferences targeting highly-skilled immigrants, providing resources and a community for newly-settled immigrants in the region

- **Skills development:** Programs through the local workforce development centers provide training and resources to assist participants with advancement towards earning a livable wage. As the STEM fields are growing employment opportunities, WD.C. clients are encouraged to explore whether their skills and interests match those career options. For example, SNAPET, in partnership with Northern Virginia Community College, secured a grant which allows SNAP recipients to take classes at NVCC, including IT courses. Additionally, for clients who have literacy barriers, Computer C.O.R.E. (a WD.C. partner) includes computer literacy in some of their ESL programs

Talent

NOVA's schools systems are among the best in the country, offering every student - no matter their economic, home language, or ability - the support, resources, and opportunities to explore, learn, and to even specialize in areas such as computer science, robotics, or rocketry.

We are committed to build upon our current human capital assets with targeted initiatives to expamd the tech talent pipeline for Amazon and for the growing tech ecosystem in NOVA and Greater Washington, D.C.

Growth...from all corners of the globe.

Since 2011, the Commonwealth of Virginia's population has grown over 5%, adding between 55,000 and 81,000 people each year for an average annual growth rate of slightly under 1% per year. Over this same time period, a steady flow of over 30,000 new immigrants to the Commonwealth has maintained the overall growth rate even as domestic in-migration patterns have fluctuated and the rate of natural increase has declined.

Net International In-Migration
73% Increase
2011 - 2017

Commonwealth of Virginia
Components of population change
Thousands

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
Total	73	81	75	55	55	43	56
Natural increase	43	41	42	41	40	36	35
Net international in-migration	19	33	30	34	39	33	33
Net domestic in-migration	10	7	-3	-20	-24	-25	-12
Annual population change	0.9%	1.0%	0.9%	0.7%	0.7%	0.5%	0.7%
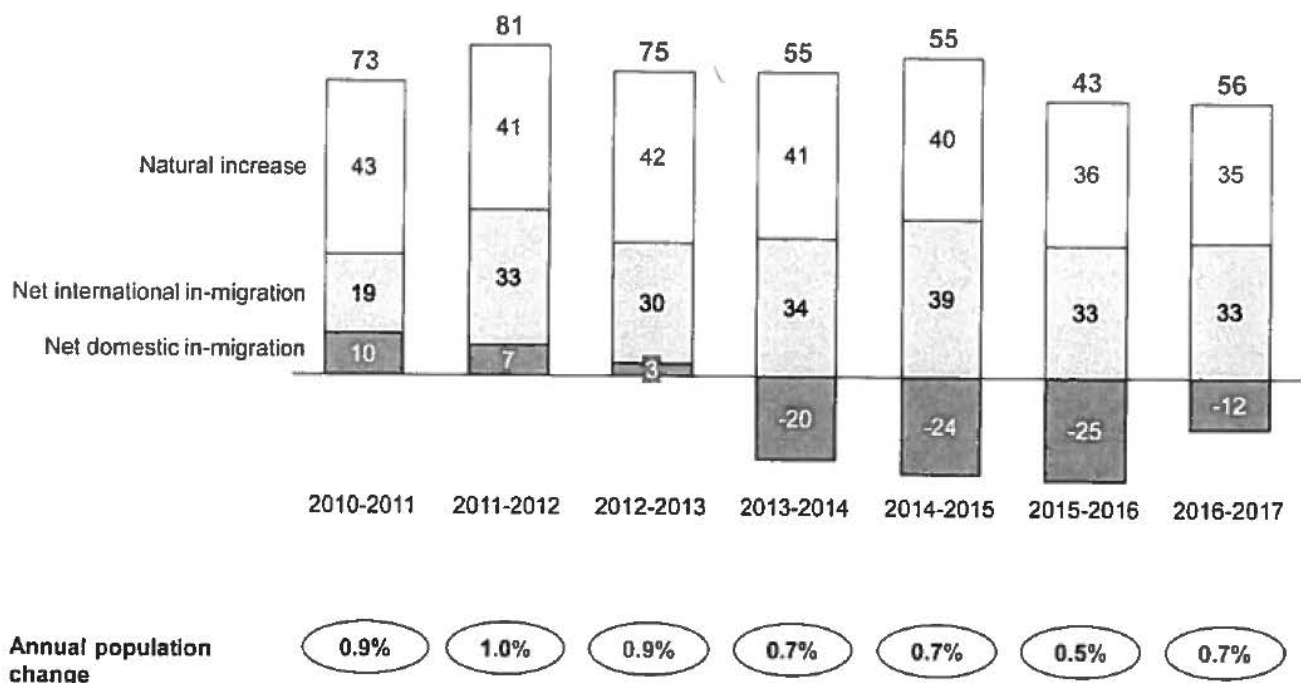
Source American Community Survey

Almost 50% of the immigrants to the Commonwealth since 2010 have come from Asia, 27% of immigrants from Latin America, 13% from Africa, 9% from Europe, and the remainder from other parts of the world. More specifically, approximately 10% of immigrants come from El Salvador, 8% from India, and 6% from Mexico, with the remainder from the rest of the world.

Compared with the **Commonwealth** as a whole, population growth for the Washington-Arlington-Alexandria **MSA has been** stronger and more stable.

On average, the region's population has grown moderately at a rate of 1% per year since 2013, adding between 53,000 and 95,000 people each year. Similar to Virginia's overall story, net international in-migration has increased over 60% from 2011-2015, supporting overall positive population growth even as the region's domestic migration patterns have reversed from a positive 22,000 inflow in 2011 to negative 31,000 in 2015. These domestic migration trends are in line with historical patterns for the MSA, which has historically experienced domestic in-migration during nationwide economic downturns and net domestic out-migration during periods of robust national economic growth.

Washington - Arlington-Alexandria, DC-VA-MD-WV MSA
MSA population growth: components of population change
Thousands
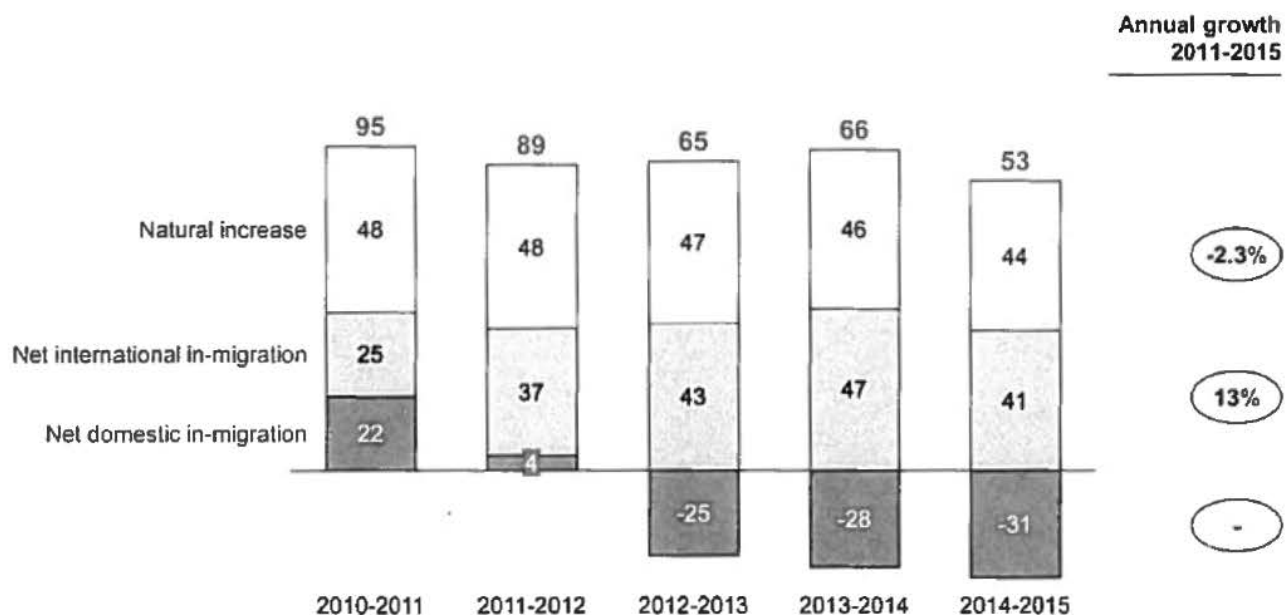
Source American Community Survey

In total, immigrants from over 120 countries call Northern Virginia home.

From 2011-2016, immigrants from China, India, and Germany made up nearly 20% of this inflow into Northern Virginia while immigrants from the African continent made up 11% of the total. Many of these immigrants have found communities with some of the densest diasporas in the country.

For instance, the Greater Washington area is home to the densest concentration of Ethiopian and Salvadoran immigrants and the fourth-largest Indian immigrant population in the U.S. (behind NYC, Chicago, and San Jose).

County	% Foreign-born
NOVA	27%
Arlington County, Virginia	23%
Fairfax County, Virginia	30%
Loudoun County, Virginia	23%
Prince William County, Virginia	23%
Alexandria City, Virginia	28%
Fairfax City, Virginia	28%
Falls Church City, Virginia	16%
Manassas City, Virginia	28%
Manassas Park City, Virginia	33%

Source American Community Survey

Top 10 countries of origin for foreign-born residents

County	% of total NOVA immigrants
El Salvador	12.00%
India	8.90%
Korea	6.20%
Vietnam	5.10%
China	4.50%
Bolivia	4.00%
Philippines	3.80%
Honduras	3.40%
Ethiopia	3.30%
Pakistan	3.30%

The Greater D.C. region's immigrant population are among the most highly educated, highly skilled, and highly paid workers in the country.

According to the American Community Survey, 42% of all immigrants possessed a bachelor's degree or higher and 18% of these individuals earned over $75,000/year. The share of highly educated immigrants coming to the D.C. MSA is only increasing, with 60% of all recent immigrants from 2012-2016 possessing a bachelor's degree or higher.

Recent immigrants' (moving between 2012-2016) educational attainment
Share, Bachelors+

All immigrants' educational attainment
Share, Bachelors+

City	Recent immigrants Share, Bachelors+	All immigrants Share, Bachelors+
San Francisco	63	40
Greater D.C.	60	42
Seattle	60	41
Chicago	59	30
Boston	57	39
Pittsburgh	54	57
Raleigh	54	42
Denver	54	27
Columbus	53	43
Austin	52	33
Los Angeles	52	26
New York City	50	32
Newark	50	32
Philadelphia	49	39
Atlanta	48	34
Dallas	46	26
Nashville	46	29
Indianapolis	41	34
Miami	39	26
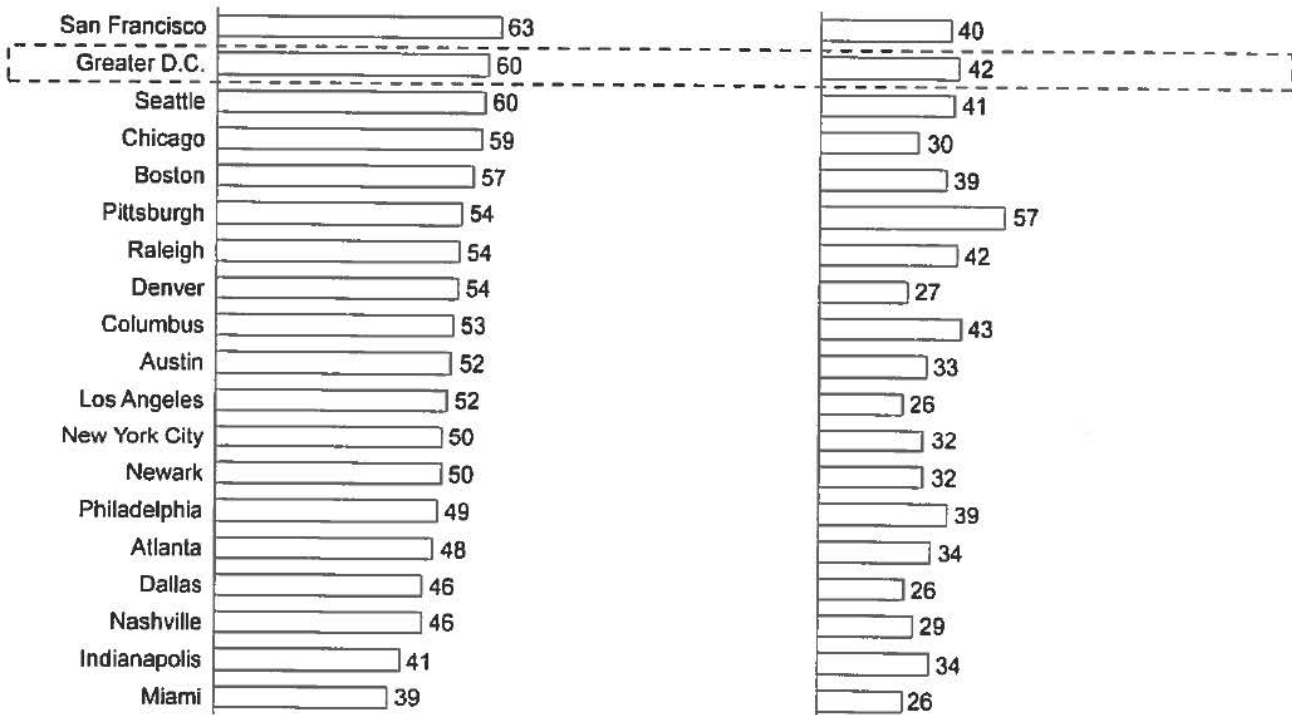
Source: American Community Survey, 5-year estimates, 2012-2016

Greater D.C., and especially Northern Virginia, continues attracting young talent

The Greater D.C. area has a highly concentrated population of young people on par with other major competitor cities. With 16-24-year-olds and 25-34-year-olds making up approximately 12% and 15% of the population, respectively, the region's numerous cultural, recreational, and economic assets have made the region an attractive location for college students and young adults, and these assets area attracting more young adults every year.

For instance, from 2012-2016, the region's 16-to-24-year-old population grew by 3%, driven largely by Northern Virginia's 8% growth. While Greater D.C.'s 25-to-34-year-old population grew 6% over this period, the region experienced stronger growth among individuals ages 35-44 (nearly 3% vs. average 0.5% for other metros) and 45-54 (nearly 3% vs. average of less than 2% for other metros). This growth, especially among young adults, continues to inject energy and vibrancy to an already dynamic region.

Washington - Arlington-Alexandria, DC-VA-MD-WV MSA
Population breakdown by age
Percent

Share of population, 16-34 year olds
Percent

	0-15	16-24	25-34	35-44	45-54	55-79	80+	Share of population 16-34
Austin-Round Rock, TX	22	13	17	15	13	18	2	30
Los Angeles-Long Beach-Anaheim, CA	20	13	15	14	14	20	3	28
Columbus, OH	22	12	16	14	14	21	3	28
New York City	19	12	15	13	14	22	4	27
Boston-Cambridge-Newton, MA-NH	18	13	14	13	15	23	4	27
Dallas-Fort Worth-Arlington, TX	24	12	15	14	14	19	2	27
Greater D.C.	21	12	15	15	15	20	3	27
Denver-Aurora-Lakewood, CO	21	11	16	15	14	21	3	27
Chicago-Naperville-Elgin, IL-IN-WI	21	12	14	14	14	22	3	27
Nashville-Davidson--Murfreesboro--Franklin, TN	21	12	15	14	14	22	3	27
Atlanta-Sandy Springs-Roswell, GA	23	12	14	15	15	20	2	26
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	20	12	14	12	14	23	4	26
Raleigh, NC	22	12	14	15	15	20	2	26
Indianapolis-Carmel-Anderson, IN	23	11	14	14	14	21	3	26
Miami-Fort Lauderdale-West Palm Beach, FL	18	11	13	13	15	24	5	24
Newark, New Jersey	20	11	13	13	15	23	4	24
Pittsburgh, PA	17	11	13	12	14	28	5	24

Source: American Community Survey microdata, 2016

Domestic migration patterns have varied based on the industry, with Professional Services (including IT) experiencing an inflow of domestic talent

Recent net domestic out-migration patterns have followed historical trends, with the metro area losing residents to other lower-cost, faster-growing regions during periods of economic expansion. In general, the Federal Government and industries closely tied to it, including associated contractors, offer steady and secure employment, especially during periods of economic contraction. Despite overall domestic out-migration, the Professional Services (including IT) sector has remained strong in the region, experiencing net positive in-migration during 2013-2015. Lower-wage industries like Retail Trade and Leisure and Hospitality lost a total of 6,000 and nearly 3,000 people, respectively, during this same period. Overall, the region has shown resilience in its ability to attract and retain top talent in higher paying sectors like Professional, Scientific, and Technical Services and Management, which aligns well with HQ2's needs.

Washington - Arlington-Alexandria, DC-VA-MD-WV MSA
Migration patterns by industry
Thousands

Industry	Value
Prof., Sci. & Tech. Svcs & Mgt	2.0
Federal Government	4.3
Health Care & Social Assistance	-1.8
Retail Trade	-6.0
State & Local Government	-1.8
Leisure & Hospitality	-2.7
Other Services	1.2
Educational Services	-1.9
Financial Activities	-0.9
Construction	1.3
Manufacturing	-1.9
Admin., Support & Waste Mgt	-0.8

Overall, the D.C. metro area has maintained positive population growth, increasingly driven by the inflow of more highly educated and highly paid immigrants. In terms of domestic migration, recent trends of net out-migration are consistent with national trends and reflect the historical, cyclical patterns characteristic of economic and population changes in the D.C. MSA. Two exceptions are the IT and Professional Services sectors, which have continued to grow and attract individuals from across the country to move to the region.

The Greater D.C. region is the most educated MSA in the country.

With nearly 50% of the population possessing a baccalaureate-level degree or above and nearly 25% with *even higher* levels of education, the Greater D.C. region outranks its Top 20 peers in educational attainment. NOVA tops these leading figures, ranging from 58% of the population in Loudoun with a bachelor's degree or higher to 72% in Arlington.

There is a larger share of residents with Bachelor's degrees and above in NOVA than in any other large metropolitan area

Level of educational attainment
Percent with a Bachelor's degree or higher (%)

Region	%
Arlington	72%
Northern Virginia	62%
Alexandria	61%
Fairfax	59%
Loudoun	58%
Montgomery County, MD	58%
Washington, DC	49%
Boston	45%
Raleigh	43%
Austin	42%
Denver	41%
Seattle	39%
New York City	38%
Atlanta	36%
Chicago	35%
Philadelphia	35%
Newark	34%
Columbus	34%
Dallas	33%
Pittsburgh	32%
Los Angeles	32%
Nashville	32%
Indianapolis	31%
Miami	30%
Toronto	30%

US average
33
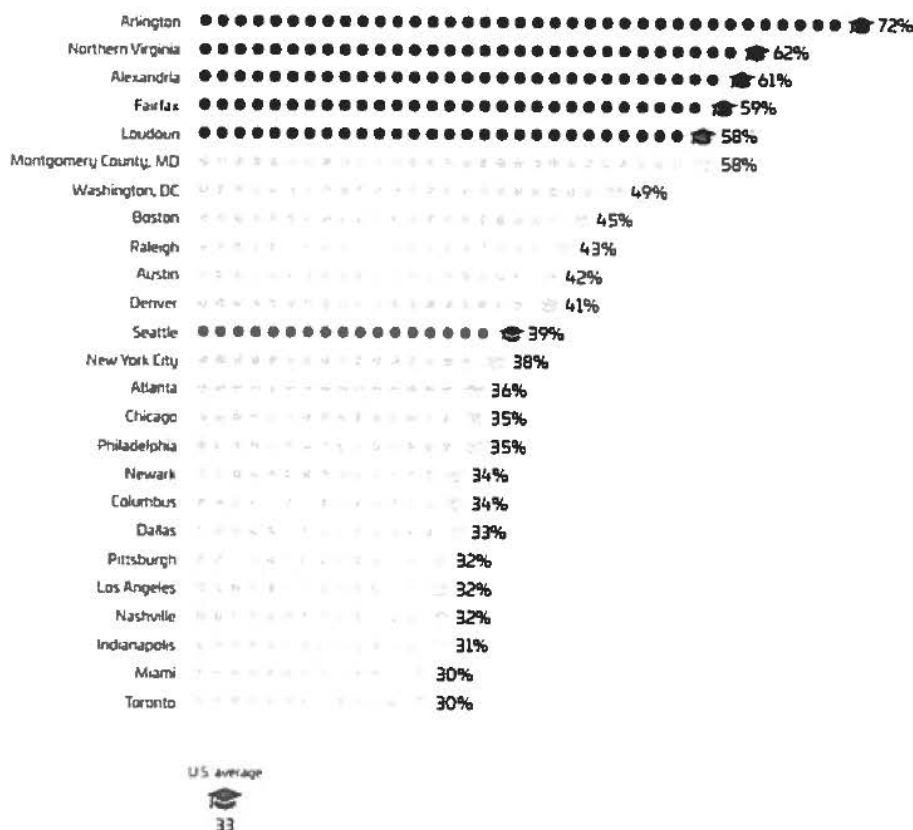
Source: 2011-2015 American Community Survey, C-Vue Economics 2015

Moreover, our region continues to increase its already-high educational levels.

Though the overall population grew 6% from 2011-2016, the number of residents with a bachelor's degree grew by 8% and those with a graduate degree grew by 14%, more than twice that of the population.

NOVA (Alexandria City, Arlington County, Fairfax County, and Loudoun County)
Educational attainment
% of total

	1,229	1,257	1,273	1,287	1,303	1,307
Graduate	29%	29%	29%	30%	30%	31%
Bachelor	32%	32%	33%	31%	32%	32%
Associate	5%	5%	5%	5%	5%	5%
Some college	14%	13%	13%	13%	13%	13%
HS	13%	13%	12%	12%	13%	12%
<HS	7%	8%	7%	8%	8%	8%
	2011	2012	2013	2014	2015	2016
Bachelor's+	61%	61%	62%	61%	62%	63%
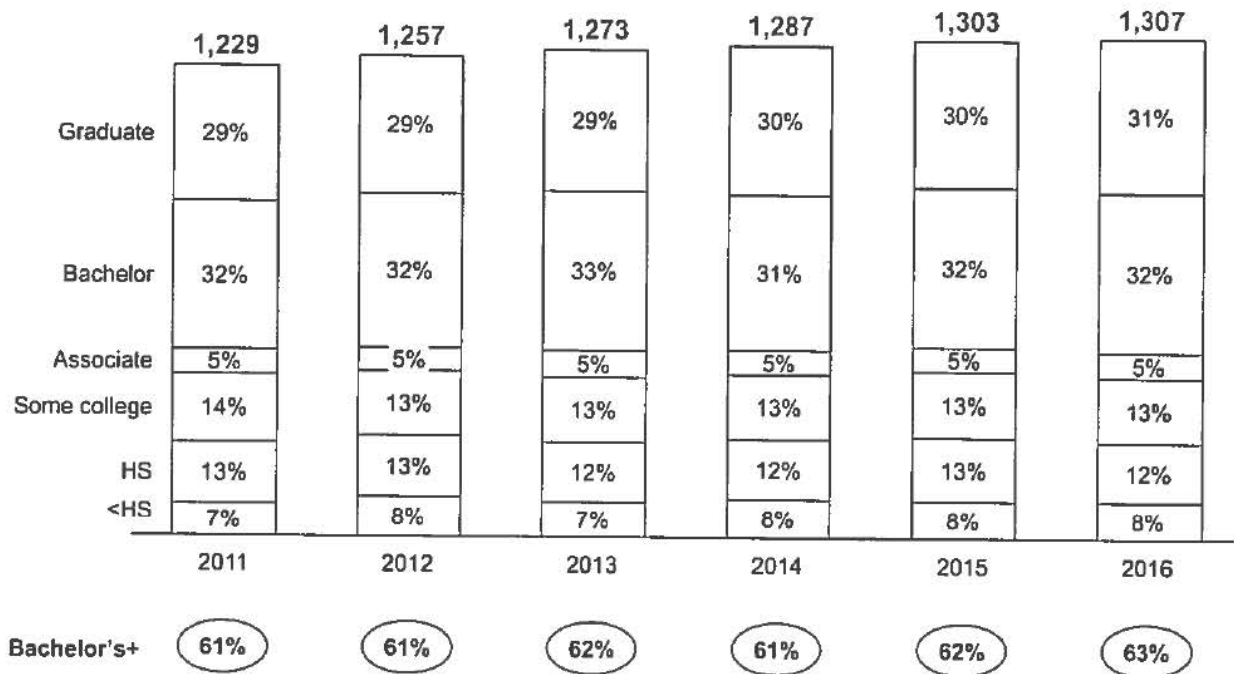
Source: American Community Survey

Several recent trends are driving the changes in the educational attainment levels in Northern Virginia.

- **Increase in sub-high school attainment**: Despite Northern Virginia's school systems seeing slight increases in their already-high school graduation rates, the overall numbers of those with less than a high school education have increased over time. Nonetheless, there are few better communities in the country for families to improve their economic status for themselves, and especially for their kids. For instance, the economist Raj Chetty found that a child born into the 25th income percentile in NOVA's communities is likely to make it to the 48th percentile by age 30, the best progress of all the Top 20 cities.

- **Net domestic out-migration.** As highlighted in the previous section, the Greater D.C. region (not just NOVA) has struggled to retain workers in typically lower-paying sectors like Retail and Leisure & Hospitality, with net losses of 6,000 and 2,700 workers, respectively. Similarly, the region has also struggled to offer enough quality jobs to our recent STEM graduates, awarding over 56,000 STEM degrees from 2011-2016 but only adding 40,000 tech jobs from 2012-2016 according to CBRE's 2017 Scoring Tech Talent report. With the addition of a major tech employer like Amazon and the companies that will co-locate, the region will be able to retain more of its recent STEM graduates.

- **Rapid influx of highly educated immigrants.** As mentioned in the previous section, nearly 60% of the recent immigrant population had a bachelor's degree or higher, adding to the stock of highly educated immigrants in the Greater D.C. area.

These changes are occurring while the Commonwealth of Virginia has been able to increase its associate and bachelor's degree production.

From 2011-2016, Virginia's higher education institutions increased the number of associate's degree and bachelor's degree graduates by 15% and 18%, respectively. In absolute terms, the Commonwealth's institutions increased its annual production of associate's degrees by more than 3,000 degrees and bachelor's degrees by 5,200 in five years.

With respect to associate's degrees, NOVA has invested time and resources in ensuring our institutions can fill high-demand occupations—and the growth numbers show it. The Commonwealth of Virginia, in particular, has focused on expanding access and incentivizing the pursuit of high-need credentials from these schools, following the passage of the New Economy Workforce Credential Grant. The program, the first of its kind, provides a pay-for-performance model for funding noncredit workforce training that leads to a credential in a high-demand field. Eligible institutions (community colleges and higher education centers) and the Commonwealth have partnered to cover two-thirds of the total cost for the training, while the student is responsible for covering the remaining third.

As a community, we continue to invest in the quality of our public education while simultaneously expanding access, improving affordability, and increasing convenience to ensure the region continues producing, retaining, and attracting highly educated workers to the Greater D.C. region.

A1.c. Tech job levels - Specify the changes in the number of tech jobs in your community over the last five years and the major reasons for these changes (including the major draw for tech companies in your community).

The D.C. MSA's concentration of tech talent is the highest among the HQ2 Top 20.

In the Greater D.C. region, 14% of the workforce are in tech jobs compared to 12% in greater New York City. Furthermore, our region has the second-highest number of tech workers among our peers, with nearly 235,000 tech workers. And, much like our education levels, NOVA is the top performer among our neighbors in D.C. and Montgomery County. NOVA's 123,000 tech jobs are more than half the D.C. MSA's total, nearly 4 times the level of Montgomery County and 1.5 times the level of Washington, D.C.

Washington - Arlington-Alexandria, DC-VA-MD-WV MSA
Number of technology jobs by MSA[1]
Thousands

New York-Newark-Jersey City, NY-NJ-PA	321,791
Washington-Arlington-Alexandria, DC-VA-MD-WV	234,738
• NOVA	123,038
▪ Montgomery County, Maryland	32,019
▪ Washington, D.C.	79,681
Los Angeles-Long Beach-Anaheim, CA	194,868
Chicago-Naperville-Elgin, IL-IN-WI	158,342
Dallas-Fort Worth-Arlington, TX	150,265
Boston-Cambridge-Newton, MA-NH	138,040
Atlanta-Sandy Springs-Roswell, GA	123,374
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	100,805
Denver-Aurora-Lakewood, CO	74,735
Miami-Fort Lauderdale-West Palm Beach, FL	65,225
Austin-Round Rock, TX	63,675
Columbus, OH	45,258
Pittsburgh, PA	36,998
Raleigh, NC	36,542
Indianapolis-Carmel-Anderson, IN	33,278
Nashville-Davidson--Murfreesboro--Franklin, TN	26,626

1 Computer/math occupations
Source EMSI

Our recent changes in tech jobs show the continued positive growth over the past five years, adding 4,000 tech jobs from 2013-2017.

Greater D.C.'s growth of over 1,000 new tech jobs per year again is driven by NOVA, which accounted for over 50% of the growth over the last five years.

The year-by-year changes again highlight the impact of federal sequestration mentioned in the previous answer, as well as our region's resilience and diversity. From 2013-2014, Greater D.C. *lost* 2,400 tech workers as both the Federal Government and related contractors stopped hiring and consolidated. However, the region's efforts to diversify its economy, especially its tech sector, away from the Federal Government contributed to recent, more robust growth since 2015. Now, adding ~1,000 new workers per year since 2015, the Greater D.C. region ranks fourth overall in total growth of tech talent over the last three years.

NOVA
Number of technology jobs[1]
Thousands

2014 is the only year where tech growth slowed down in NOVA due to sequestration; but NOVA bounced back quickly the very next year

2013	2014	2015	2016	2017
119,014	116,610	121,271	122,231	123,038
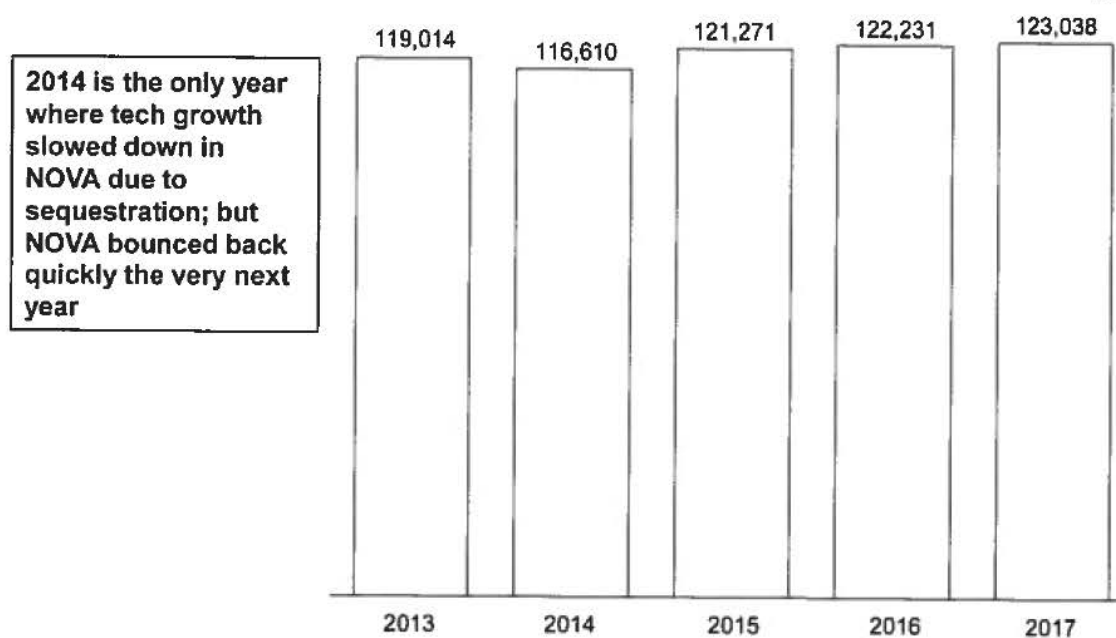
1 Computer/math occupations
Source: EMSI

The continued positive growth in our region is explained by several factors.

- First, just as we're a magnet for the highest educated, we're known as a great place for tech and tech talent. The sheer density of the IT and professional services in Greater D.C. highlights the region's outsized focus in these sectors and the depth of the industry clusters.

- Second, talent follows talent—and education. Our region's high education levels and quality of education—particularly our public schools—are consistently cited as reasons why talent comes to NOVA.

- Third, the proximity to the Federal Government—whether as a regulator, customer, or co-innovator—draws many of our tech companies and clients nearby. Our tech companies find that being at the nexus of public and private innovation is critical to ensuring their businesses stay on the frontier.

- Finally, our companies choose NOVA because it's a great place to do business, and we are consistently ranked as such.

Sustained growth and success of our tech talent and companies would only be possible if our business environment and talent both find our region a great place to come, stay, and grow.

A1.d. Diversity - Specify the changes in composition in your community as a whole and within the tech industry in (i) race and ethnicity, (ii) gender, and (iii) foreign-born individuals.

NOVA is among the most diverse regions in America.

We take great pride in the diversity of our community as a whole and our tech community, in particular, both of which are among the most diverse in North America. Across our NOVA counties, our ethnic, gender, and international diversity is a great asset to our community—and something we celebrate.

Our racial and ethnic diversity is evident in the level and changes in our composition. Our community currently identifies as 54% white, 15% Hispanic, 19% Black, 9% Asian, and 3% other ethnicities. From 2012-2016, our non-white populations have grown the fastest, with Hispanic (1.6% average annual growth rate), Black (3%), Asian (2.2%), and Other (3.1%) groups growing much faster than Whites (0.1%).

Race: ☐ Other   ▨ Hispanic or Latino
       ☐ Asian or Pacific Islander   ☐ White
       ▨ Black or African American
Gender: ☐ Female ☐ Male
Nativity: ▨ Foreign-born ☐ Native

**Northern Virginia
Diversity
Percent of population**
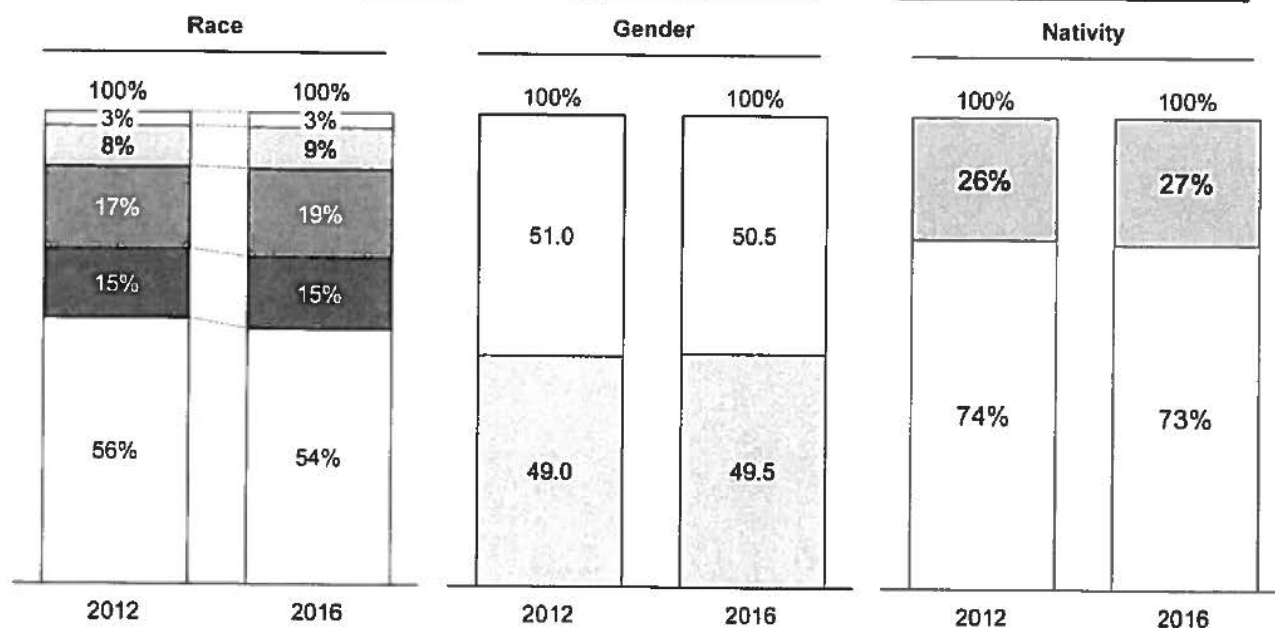
Source: EMSI for Race and Gender analyses. American Community Survey data for Nativity analyses

Our foreign-born population is a source of strength and pride.

Across the Greater D.C. region, we are 28% foreign-born, ranking in the top five MSAs nationally, and our foreign-born population has been growing at an amazing 2.3% per year.

Washington - Arlington-Alexandria, DC-VA-MD-WV MSA
Foreign born population as a share of population
Thousands

Miami	49
Los Angeles	46
New York - Newark	37
Greater D.C.	28
Dallas-Ft. Worth	24
Chicago	23
Boston	22
Austin	19
Atlanta	17
Denver	15
Raleigh	15
Philadelphia	13
Nashville	9
Columbus	9
Indianapolis	8
Pittsburgh	4
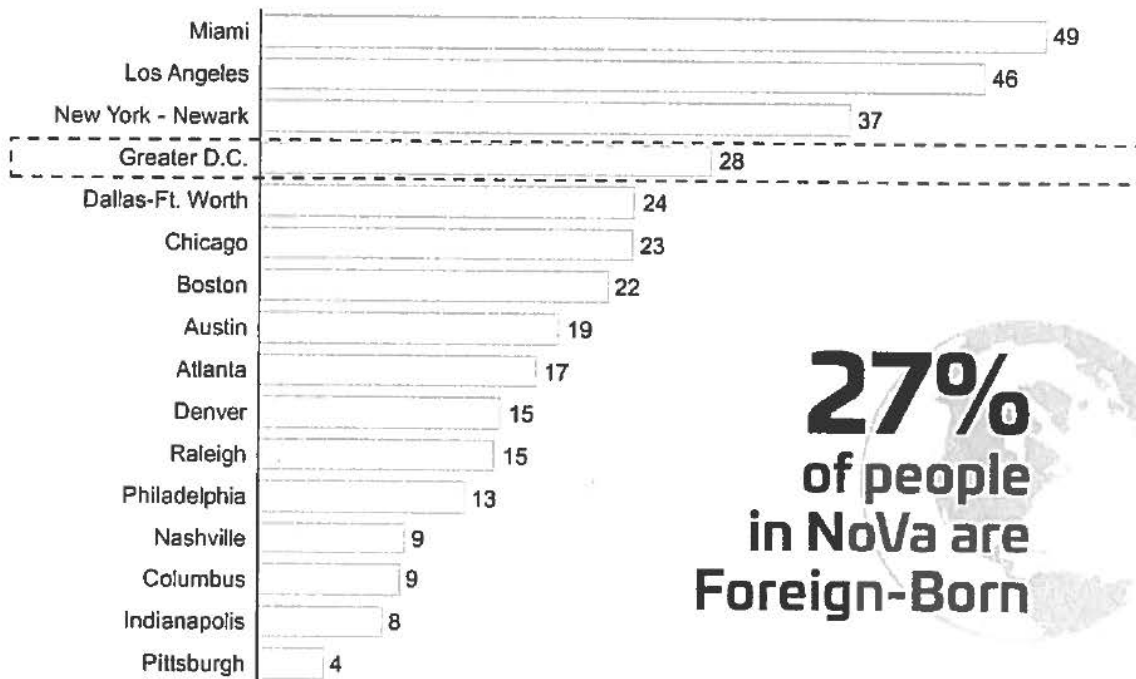
27%
of people
in NoVa are
Foreign-Born

Source American Community Survey, 2012-2016

NOVA prides itself on being a welcoming community that makes immigrants at home.

In most counties, over 25% of people are foreign, including Arlington (23%), Alexandria (28%), Fairfax (28%), and Loudoun (23%) for an average of 27% foreign-born in the region. Unlike other regions with foreign-born citizens from a certain geographic region, our foreign-born citizens come from 120 different countries.

El Salvador 12%   India 9%   Korea 6%   Vietnam 5%

China 4.5%   Ethiopia 3.5%

The benefits of this international diversity are plentiful: increased tolerance from diverse neighbors and children, multicultural and global experiences, and, of course, our award-winning and excellent ethnic food!

While nationally, immigration and foreign citizens have become a point of controversy, in NOVA we are committed to maintaining our support and integration of foreign-born citizens that make our diversity such a strength.

In many ways, Washington, D.C.'s tech sector is more diverse than in other parts of the country and the rate at which our workforce continues to diversify often significantly outpaces our competitors.

Nationally, the tech sector faces a persistent challenge in terms of diversity. Like any tech hub, we face these same challenges, though the Greater D.C. region's tech diversity figures stand out among the Top 20 HQ2 competitors.

Our workforce's diversity is the source of its strength, and we continue to welcome newcomers of all backgrounds into tech at a rate that often surpasses our competitors. With non-whites making up 48% of the tech sector, the Greater D.C. ranks the fourth-most diverse city among the Top 20 finalists. Unlike many other cities, however, our sector reflects the breadth of diversity within our population, with Asians, African-Americans/Blacks, and Hispanics making up 22%, 18%, and 5% of workers, respectively.

Washington - Arlington-Alexandria, DC-VA-MD-WV MSA
Diversity in computer and math occupations, 2017
Percent of workers
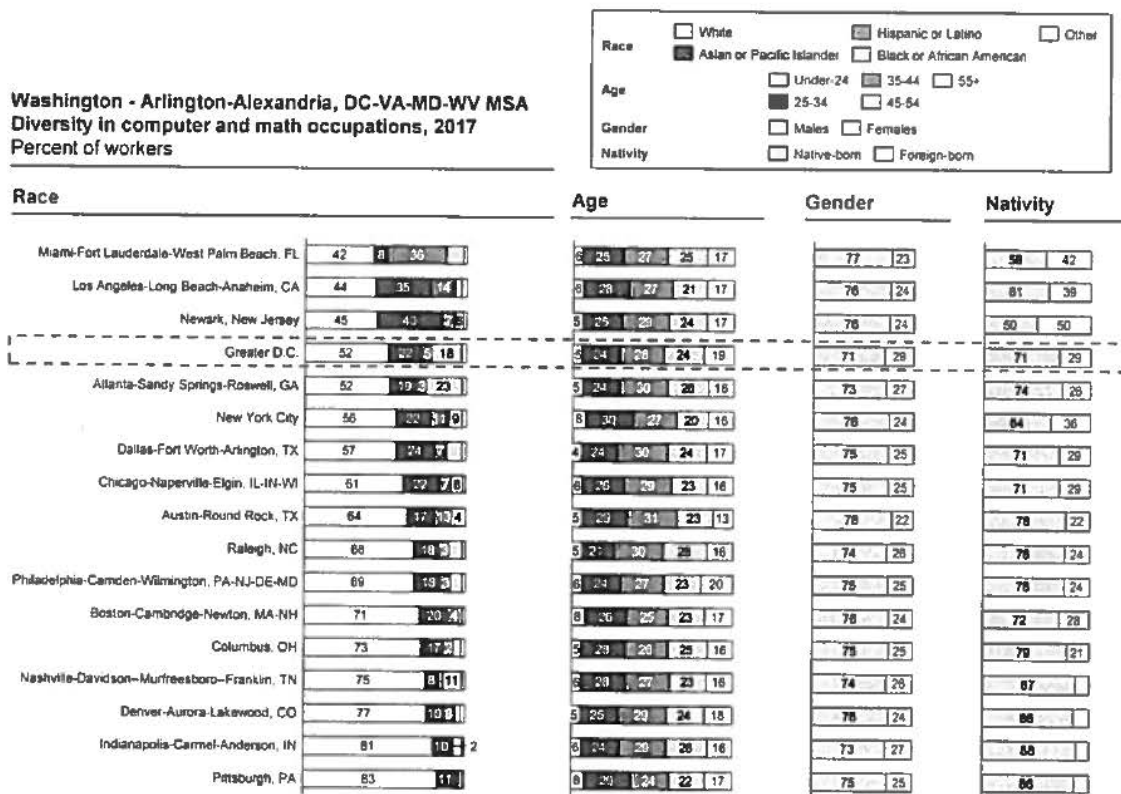
Source: American Community Survey microdata, 2016.

Starting with a relatively high base, the Greater D.C. region's diversity in tech has improved modestly over the last five years.

Racially, the share of non-whites in tech roles increased from 46% to 48% of roles. Tech in the region has grown younger with those under 35-years-old increasing from 40% to 43% of all tech roles. Last, the industry has remained stagnant in gender and nativity diversity, with both women and foreign-born individuals making up 29% of their respective shares in the tech industry in 2016. The flat growth for foreign-born individuals in tech is not surprising, however, given the high concentration of government-related tech roles that have burdensome restrictions on who can hold certain roles.

Washington - Arlington-Alexandria, DC-VA-MD-WV MSA
Diversity in computer and math occupations
Percent of workers

Race:	☐ Other	▨ Black or African American	☐ White
	☐ Hispanic or Latino	■ Asian or Pacific Islander	
Age:	☐ 55+ ☐ 45-54 ▨ 35-44 ■ 25-34 ☐ 16-24		
Gender:	☐ Female ☐ Male		
Nativity	☐ Foreign ☐ Native		
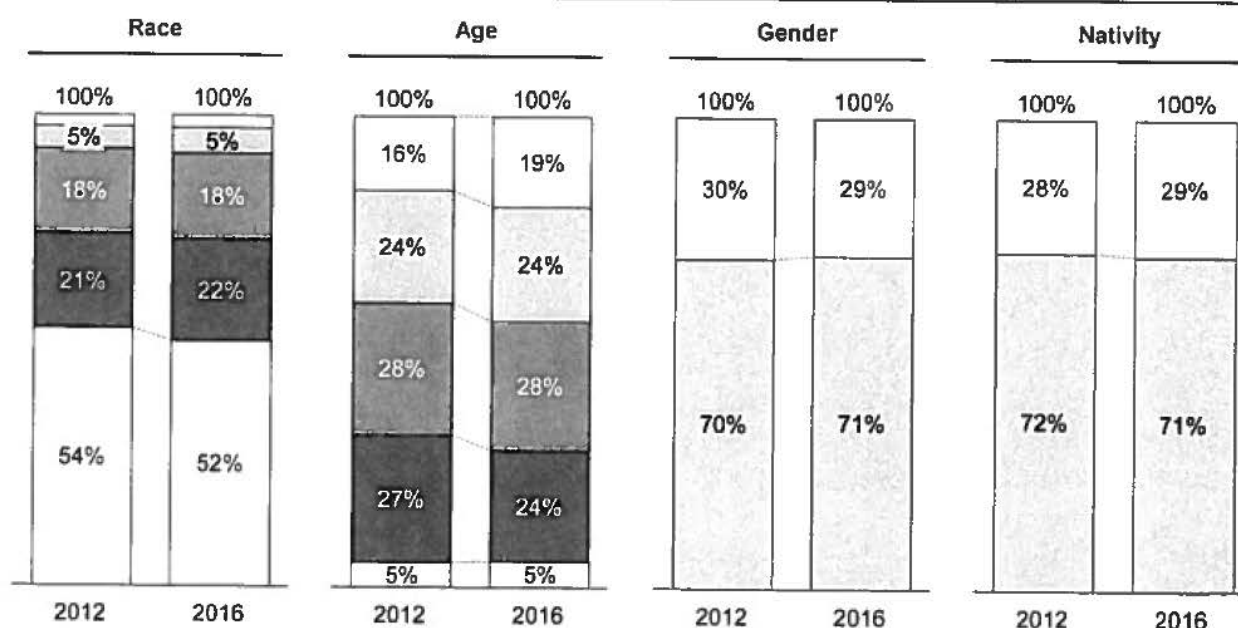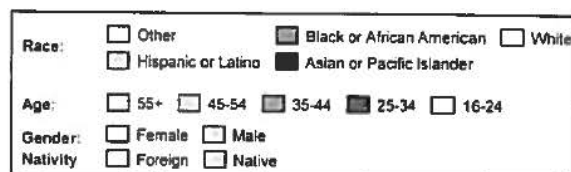
Source: American Community Survey microdata

Northern Virginia's tech sector reflects similar patterns to the Greater D.C. region with non-whites accounting for 43% of roles (vs. 48% in overall D.C. metro), 28% under 35-years-old (vs. 29%), 27% women (vs. 29%), and 31% foreign-born (vs. 29%).

Northern Virginia
Diversity in computer and math occupations
Percent of workers

Race:	☐ Other	▨ Black or African American	☐ White
	☐ Hispanic or Latino	■ Asian or Pacific Islander	
Age:	☐ 55+ ☐ 45-54 ▨ 35-44 ■ 25-34 ☐ 16-24		
Gender:	☐ Female ☐ Male		
Nativity	☐ Foreign ☐ Native		

Race	Age	Gender	Nativity

Race

	2012	2016
	100%	100%
	5%	6%
	9%	9%
	23%	25%
	60%	57%

Age

	2012	2016
	100%	100%
	15%	18%
	23%	24%
	30%	30%
	28%	23%
	5%	5%

Gender

	2012	2016
	100%	100%
	28%	27%
	72%	73%

Nativity

	2012	2016
	100%	100%
	30%	31%
	70%	69%
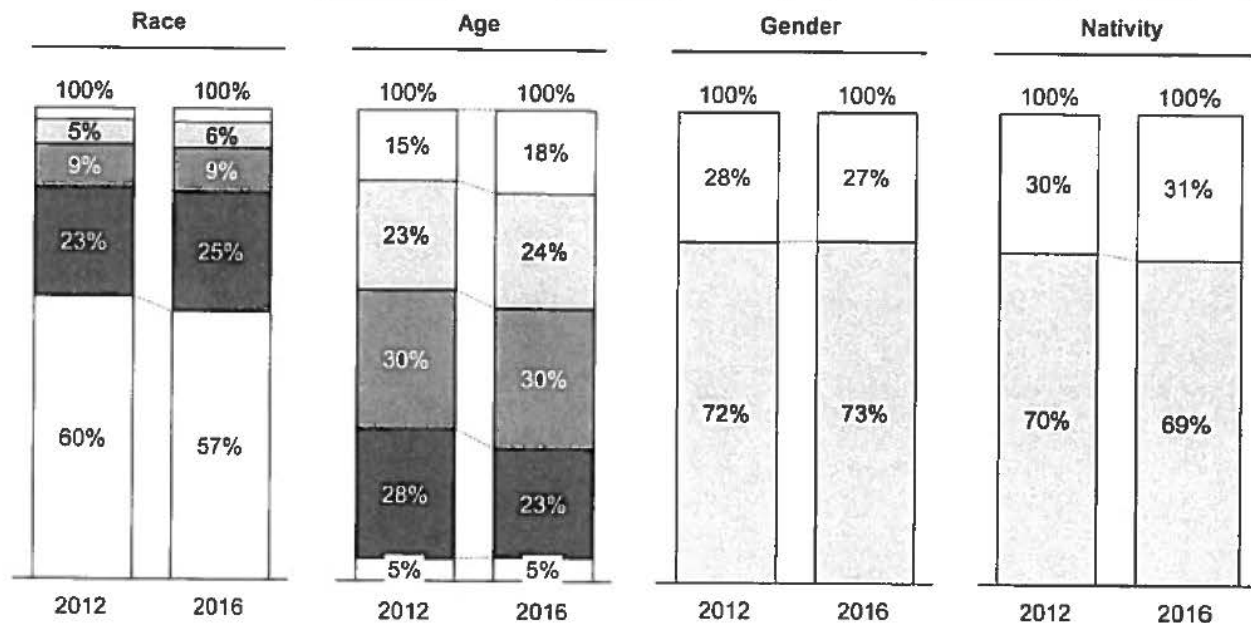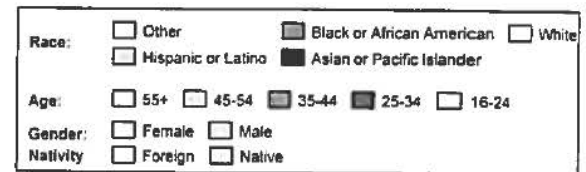
Source: American Community Survey microdata

Where we have work to do, we have identified and acknowledged these challenges and have laid out (in later sections) a series of thoughtful, compelling initiatives to intentionally shape the growth of our tech workforce to stay one of the most diverse in the country.

Talent | Big Questions and Big Ideas | Population Changes and Key Drivers
A1.e. Changes – Describe what your community is already doing to positively impact the above changes and what big
ideas you propose to accelerate the positive changes and/or reverse the negative changes.

Northern Virginia is known as a great place to live and work.

Our welcoming neighborhoods, strong public-school systems, and abundant economic opportunities make us attractive to talented professionals from Virginia, the D.C./Maryland region, across the country, and around the world. And our numbers are only growing.

We actively work to retain millennials and continue to welcome new residents of all backgrounds, including immigrants from other countries.

Our talent pipeline, from our nationally recognized K-12 education system to our community colleges and higher education institutions, is actively working to expand access to low-income students and underrepresented minorities, incentivize pursuit of high-need credentials and degrees, and improve transfer, completion, and matriculation rates for community colleges and four-year colleges and universities.

Our current efforts to embrace and accommodate our region's significant population growth and accompanying changes to its composition focus on two main strategies:

- Provide support to growing immigrant population
- Retain and attract talented millennials

Northern Virginia has been intentional about positioning itself to welcome and accommodate a growing population of immigrants and residents from diverse ethnic and national backgrounds.

We consider our diversity to be a strength and these changes to be reflective of our resolve to embrace the dynamic changes to our population and make them sustainable and long-term. The broader D.C. metro area, including Northern Virginia, has been consistently recognized for its policies, programs, and support of its immigrant community. NOVA, in particular, is home to a broad array of programs focused on ensuring immigrants find a safe, supportive, and connected community.

Examples include:

- **Family support programs** like the Northern Virginia Family Service provide a range of services to immigrant families including early childhood development, mental health, youth initiatives, workforce development, health and wellbeing, homelessness and housing, foster care and adoption, and legal services. Partnerships with the Ethiopian and Eritrean Education Alliance (assists parents in becoming acquainted with American education and local school systems), Amigas de la Comunidad (a grassroots community advisory board advocating for Spanish-speaking families living in poverty), and SCAN of Northern Virginia (bilingual parental support groups) also offer one-on-one services to parents and families.

- **Refugee support programs** spread throughout Northern Virginia address specific needs of this vulnerable population. For instance, the City of Alexandria Workforce Development Center's (WDC) Breaking the Barriers (BTB) program is a federally funded, state-administered employment program with the goal of self-sufficiency. Refugees can participate in the BTB program for up to five years after their arrival and may receive case management, employment services, and referrals to training (vocational and ESL). Another example is The Global Center for Refugee Education and Science, which delivers intensive language training programs wrapped in a holistic support approach (e.g., providing childcare, transportation, and learning materials) to break down barriers to language learning and refugee integration.

20-34 year olds make up 17-32% of the population across NOVA's localities

Our communities are home to a large and growing millennial population. The amenities, parks, culture, schools, employment opportunities, and connectivity make our communities the place to be.

2017 Best PLACES Ⓝ **NICHE**

Arlington and **Alexandria** were voted as the #1 and #4 cities for millennials in the country by *Niche Magazine* in 2017.

Demographics In Greater D.C. region, 2016
Percent of population

	Under 20	20-34 years old	35-44 years old	45-55 years old	55+
DC MSA	26	22	14	14	24
NOVA average	26	21	16	15	23
Alexandria City	20	27	18	14	21
Arlington County	19	32	17	13	20
Fairfax County	26	19	15	15	25
Loudoun County	31	17	17	16	19
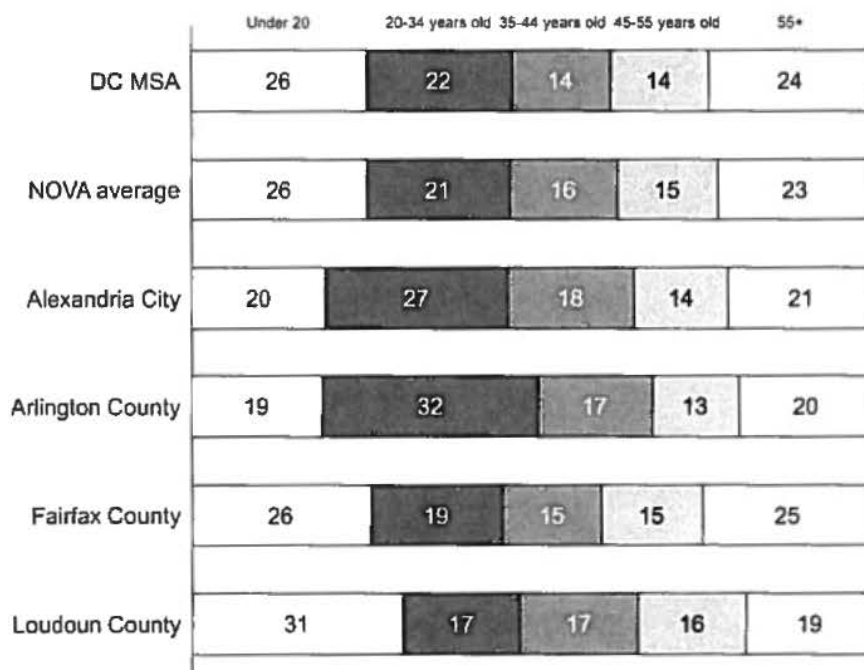
Source EMSI

Programs designed to support, retain, and attract millennials include both professional and lifestyle approaches:

- **Creating a regional corporate culture that accommodates millennials.** In 2016, the Northern Virginia Technology Council established a Millennial Board, which serves as a cross-company network of millennials for the Council's members. The Millennial Board offers a forum for millennials working in Northern Virginia tech companies to share best practices and encourage employers to adopt policies that retain and attract top millennial talent to the region, such as offering flexibility of work schedules. Another example is the 2030 Group, a regional business networking organization with a particular focus on positioning the D.C. region as a top place for millennials to live and work. The group has advocated for adoption of a regional corporate culture that is attractive to millennials and has included young professionals in their ongoing issue-oriented conversations and networking.

- **Building connected neighborhoods where millennials can live, work, and play.** The investments in infrastructure to expand the Metro throughout the localities; the increasing number of high-density, mixed-use developments in all four localities; and the push to increase the number of affordable housing units across the region will continue to ensure our millennials are thriving while also being able to save and plan for their future.

Accelerating the growth of our pool of educated talent will both **reinforce a positive and address a challenge** all prosperous economies face as they grow: **how to attract and keep** talent.

First, the region is hard at work investing in the housing and infrastructure options to continue making Northern Virginia the ideal location for all residents.

- **Affordable housing** – We know that the region's cost-of-living places a burden on the finances of many of our region's households. By focusing on attracting and retaining talent across the full economic spectrum, our region will become even stronger and more welcoming overall. With this in mind, all of our localities have passed ambitious housing master plans that require aggressive timelines and supply targets. Arlington, for instance, aims to increase the supply of affordable housing in Arlington to 17.7% by 2040 while Fairfax County's objective is to increase the supply of affordable housing units each year by at least 12% of the previous year's overall housing production levels. Please see Question A1d.vi for additional information on each locality's affordable housing programs and how the region is tackling this challenge.

- **Transportation** – The Commonwealth of Virginia has already committed over $9 billion to the transportation needs of the region over the next six years. These investments include roads, bridges, highways, and more traditional methods like walking and biking. By improving the connectivity of the region, overall cost-of-living and quality-of-life metrics will improve, making the region even more attractive for those looking to move (or stay).

Second, as the region diversifies away from the public sector, attracting higher-growth, higher-paying companies to the region, we believe domestic in-migration patterns, especially for recent college graduates, will pick up tremendously. For instance, recent domestic out-migration has been driven largely by the Retail and Leisure Hospitality sectors, typically lower-wage positions held by younger people. As the region increases the number of higher-paying jobs, we believe young, recent college graduates who may have struggled to find college graduate-level jobs will find more reason to stay.

Strengthening our public schools and universities will continue to attract world-class talent to our community.

We expect international talent to continue to flock to Northern Virginia. Some will come to university here, drawn to the tailored programs. Some will come to work in the booming tech industry here, taking advantage of dynamic growth and a welcoming climate. Some will come for our public K-12 education and STEM programs to ensure their families get access to a world-class public education. In providing equal opportunity to all, we want to build on the strength of our diverse population.

The Greater D.C. area is home to the largest concentration of tech talent in the U.S. But NOVA does not take this for granted.

There are numerous, ongoing programs throughout the region that support the increase of both the supply of talent and demand for that talent at all levels and types of companies. A few highlights are listed, though these are described in more detail in later sections.

1. **Bolster the pipeline.** Extending tech talent development and career awareness efforts earlier in the pipeline beyond high schools and into all schools (K-12 initiatives)

2. **Expand the pipeline.** Reaching out to underrepresented and nontraditional groups (women, minorities), geographies (rural areas), and talent pipelines (veterans)

3. **Build bridges between employers and educators.** Across all levels of the educational pipeline, K-12, community college, and our universities, our NOVA institutions are partnering to ensure the education our students receive add real-world value to our employers

1. Bolster the pipeline: Extending tech talent development and career awareness efforts earlier in the pipeline beyond high schools and into all schools (K-12 initiatives)

Northern Virginia, at a regional and local level, has a broad array of programs that expose young toddlers to the wonders of the natural world, middle-schoolers to the gadgetry involved in rocketry, high-schoolers to the competitive robotics fields, and college students to the business of serious gaming.

We're not just about fun and games though. The Commonwealth of Virginia has made tremendous strides in prioritizing computer science and IT skills as essential elements of the K-12 curriculum. In 2016, Virginia became the first state in the country to pass legislation to ensure every child receives access to essential computer science literacy skills, including coding, from Kindergarten through high school. By requiring local Boards of Education to ensure the standards of learning include computer science and computational thinking, Virginia recognizes how vital computer science skills will be to the workforce of today and tomorrow.

The Commonwealth's commitment to preparing our students with computer science skills complements existing and future efforts underway on the local level. Major efforts include:
- Inspire the babies
- Offer structured STEM-school experiences
- Provide opportunities for further exploration and learning
- Make it fun

Inspire the babies	children's science center	The Children's Science Center serve as the community anchor for STEM in NOVA, providing experiential learning opportunities, problem solving and design challenges, and fun memories to inspire the next generation of scientists and engineers
Offer structured STEM-school experiences	PK-5	Schools like Alexandria's Cora Kelly Elementary School and Arlington's Science Focus School integrate hands-on STEM learning experiences throughout curriculum
	Middle School	Innovative courses and practices throughout the districts like Fairfax County's Coding & Innovative Technology (CIT) course for middle school students. Or Loudoun County's Lunsford Middle School, now home to a student who received a patent for a life-saving device called the "Floodie."
	High School	High schools throughout NOVA offer nationally-ranked STEM programs:

#1 The #1 STEM public, non-charter high school in the country is a magnet school for the NOVA region

3 Governor's STEM academies in Northern Virginia

16 Nationally-ranked high schools in NOVA as ranked by *US News & World Report*

ACADEMIES OF LOUDOUN — Opening in Fall 2018, the STEM-focused high school will serve 2,500 students across three academies: science, engineering, and advanced technology (vocational)

ACPS — Alexandria City Public Schools and Northern Virginia Community College will be launching a dual-enrollment Early College program in 2020.

Provide opportunities for further exploration and learning	VIRGINIA CYBER RANGE	The Virginia Cyber Range, a Commonwealth-wide effort, provides an extensive Courseware Repository for educators and a cloud-hosted Exercise Area environment for hands-on cybersecurity labs and exercises for students.

Make it fun

JAMTECH is a non-profit that creates interactive and hands-on events to ensure the next generation of graduates are able to succeed in a high-tech economy. JAMTECH's day-long competitions teaches students to design video games while learning programming, art, design, strategy, and storytelling, all high-demand skills.

Mason Game & Technology Academy (MGTA) a partnership between the Virginia Serious Game Institute (VSGI) and the Mason Computer Game Design Program. Courses are designed by college faculty for 9-18 year olds to expose students to the world of game design and entrepreneurship.

Qualcomm
Thinkabit Lab

Thinkabit Lab, a creative makerspace/classroom, engages and exposes students to STEM-related careers that they might not know exist and provides educators an opportunity to observe best practices for teaching STEM.

NOVA benefits tremendously from the outreach efforts of a broad array of organizations, especially those of Northern Virginia Community College ("NOVA"), with campuses located across Northern Virginia.

The SySTEMic program is the college's STEM outreach program, inspiring students in elementary school to continue to pursue STEM education in high school, college, and the workforce through a collaboration with schools, businesses, and community organizations. Programs include activities such as summer STEM camps, career exploration, competitive robotics, and STEM dual enrollment delivered to participating students and teachers. These programs are built on filling the critical need for a hands-on, activity-based approach to learning STEM through collaboration and innovative teaching methods.

Northern Virginia Tech Talent Pipeline
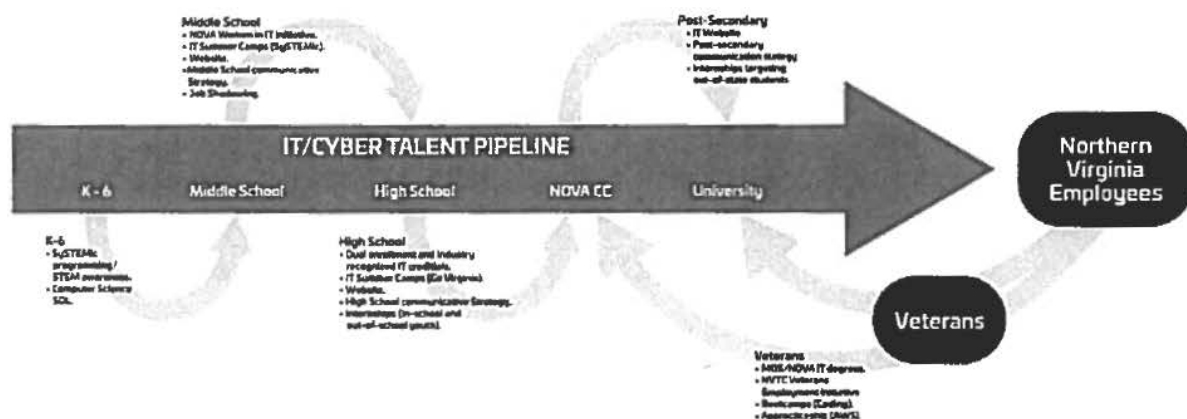
2. Expand the pipeline. Reaching out to underrepresented/nontraditional groups (women, minorities), geographies (rural areas), and talent pipelines (veterans)

We know that many college students make the decision to major in STEM well before they step foot on campus. Northern Virginia's schools and communities are dedicated to ensuring every child understands the wonders of the STEM world from a young age and regardless of their family background. And we continue to innovate and develop new programs to increase engagement across communities, particularly those underrepresented in tech. For instance, the relatively recent launch of the Global STEM Grand Challenges program at Edison High School in Fairfax County, where 43% of the participants are either Hispanic or African-American, provides an intensive, three-year interdisciplinary approach to learning STEM and cultivating a passion for future STEM careers.

Under-represented groups	NOVA is pursuing three core strategies to expand the tech pipeline: 1. Raise awareness of STEM programs within underrepresented groups across Virginia's K-12 schools 2. Ensure students have the support and resources to start and complete STEM programs at higher education institutions 3. Support continuing education and professional development within the workforce **Note**: We discuss our outreach programs targeting women and underrepresented groups in Question A2.c.
Rural efforts	Efforts like the Lab School for Advanced Manufacturing Technologies in Central Virginia develop innovative partnerships between employers, higher education institutions, and local school districts. The Lab Schools, in particular, are model schools operated by UVA in collaboration with the local school systems to develop and teach design engineering courses to middle- and high-school students.
Veterans	Veterans make up a relatively high share of NOVA residents (7.5% vs. national average of 5%); this concentration is particularly high at Northern Virginia Community College where 15% of the student body are active-duty service members or veterans. Northern Virginia Community College (NOVA) and Amazon Web Services (AWS) apprenticeship program offers a structured program to complement veterans' professional and educational experiences with skills in high-demand by AWS. We discuss other veterans-focused initiatives throughout the document, including the venture capital section (Talent A3.b and A3.c) and social challenges section (Growth A2.c).

3. Build bridges between employers and educators. Across all levels of the educational pipeline, K-12, community college, and our universities, our NOVA institutions are partnering to ensure the education our students receive add real-world value to our employers

NOVA is building innovative partnerships with employers to ensure our students provide immediate impact to employers on day one. Employer partnerships are discussed in Section A4.a.

Northern Virginia's tech talent is a longtime strength of the region.

NOVA sits at the nexus of North America's greatest producer of tech talent and a state with a premier human capital base generating strong statewide outcomes. This success continues to generate significant employer demand in high-growth sectors. But success yields further challenges in the talent ecosystem to keep up with this dynamic growth.

As a region, we welcome the challenge of maintaining our frontier position in the development of tech talent.

As part of our partnership proposal, Northern Virginia has developed a comprehensive strategy to further catalyze development for North America's greatest producer of talent. This commitment will ensure that there is a robust, world-class talent base input for growing our core tech employers.

To do this, the Commonwealth has proposed three key initiatives:

Several regional and local efforts have also been proposed (and some approved) to support the rapid growth within the tech industry:

1. Co-locate a STEM Education Center led by Northern Virginia Community College to provide technology education programs, workforce development programs, technology infrastructure, and distance education programs for Northern Virginia students and workers

2. Execute a GO Virginia Northern Virginia Tech Talent Pipeline initiative that will invest in building an interactive web portal to connect residents with training and job opportunities within the tech sector

3. Launch GO Virginia's Strengthening Arlington/Alexandria's Technology Workforce initiative that will support unemployed and underemployed residents in securing the skills needed to transition into high-demand IT jobs

4. Engage Northern Virginia Technology Council's Tech Talent Employer Collaborative leaders to better understand their talent needs and to develop sensible regional solutions

Commonwealth Proposals:

Regional and local proposals

1. Co-locate a STEM Education Center led by Northern Virginia Community College to provide technology education programs, workforce development programs, technology infrastructure, and distance education programs for Northern Virginia students and workers

Target outcome
Develop new on-site technology center to house cutting-edge technology education programs, workforce development programs, technology infrastructure, and nationally-recognized distant education programs. This site will also serve as the new location for the AWS Apprenticeship program.

How it will work
Northern Virginia Community College is prepared to commit to the development of the new center. This commitment is derived from their existing local capital outlay funding, and does not include the significant ongoing personnel and operating costs that NOVA could expend in developing and providing educational or training programs.

Program design elements, including disciplines and curricula, are envisioned to be co-developed with Amazon to ensure Amazon's talent needs are met and our students are prepared for the rapidly changing tech industry.

2. Execute GO Virginia Northern Virginia Tech Talent Pipeline initiative which will invest in building an interactive web portal to connect residents with training and job opportunities within the tech sector

Target outcome
Promote pathways to high-demand IT jobs and awareness of the training, educational, and financial resources available to technology workers in NOVA.

How it will work
Alexandria, Arlington, Fairfax, and Loudoun are supporting and participating in a regional Tech Talent Pipeline initiative. The primary vehicle to promote pathways will be the launch of an interactive web portal to help foster connections to training and job opportunities. The initiative will also fund grants to expand the capacity and impact of nonprofit organizations and educational institutions to support activities like summer credential camps and work-based learning opportunities for students in an effort to strengthen aspiring technology workers' interest in IT careers.

3. Launch GO Virginia's Strengthening Arlington/Alexandria's Technology Workforce initiative that will support unemployed and underemployed residents in securing the skills needed to transition into high-demand IT jobs

Target outcome
Engage unemployed and underemployed residents to support interested candidates in securing the skills and experiences to fill high-demand IT positions.

How it will work
The Arlington/Alexandria Regional Workforce Council has received approval from the GO Virginia economic development group to move forward with the Strengthening Arlington/Alexandria's Technology Workforce initiative. Under this program, individuals interested in transitioning to computer science related occupations who are currently unemployed or underemployed will be eligible to receive training and credentialing services to fill critical skill gaps and make them career ready. Additionally, the program will partner with small- and medium-sized firms located in NOVA to provide their technology workers training and credentialing services to enhance individual skills and capabilities while also benefiting companies that are on a growth trajectory.

4. Engage Northern Virginia Technology Council Tech Talent Employer Collaborative regional tech leaders to better understand their talent needs and to develop sensible regional solutions

Target outcome
Engage leaders in the tech industry to better understand their talent needs but also leverage their expertise to identify problem areas and craft sensible regional solutions to address needs.

How it will work
The collaborative brings together senior talent acquisition leaders from Northern Virginia Technology Council member companies to address the shared workforce needs of local technology employers. Participating firms include Altamira, Deloitte, Leidos, MITRE, and SAIC, and plans are underway to identify tangible steps that the region can take to increase the quantity and quality of the tech workforce in the region.

While Virginia and the Greater D.C. MSA already produce the largest annual number of CS graduates among all peers, we plan to increase the availability and quality of the pool of talent for the next 20 years and beyond.

Building on our strengths, we will develop new programs, degrees, and innovative pedagogical models that prepare our graduates to be the innovators, thinkers, programmers, and designers that top tech companies need. Our statewide commitment to the upscaling of tech programs and a dedicated Tech Campus will further enhance our tech ecosystem, catalyzing the development of new degree programs, online programs, and boot camps across the region.

A2.c. Diversity and inclusion - Describe what your community is currently doing to support underrepresented minorities in tech and what your community proposes to do in the future to enhance these efforts.

We pride ourselves on being home to a diverse range of tech talent.

Though the tech sector in the Greater D.C. area, including NOVA specifically, is more diverse than most major metros, we are committed to growing these numbers. To do this, we will increase the support and focus on minority tech talent at every level, be it pre-K-to-12th programming, graduate level programs, or through professional networks.

To continue to grow diverse interest in tech, we are focused on three key strategies:

1. Raise awareness of STEM programs within underrepresented groups across Virginia's K-12 schools

2. Ensure students have the support and resources to start and complete STEM programs at higher education institutions

3. Support continuing education and professional development within the workforce

1. Raise awareness of STEM programs within underrepresented groups across Virginia's K-12 schools

Target outcome
Boost the tech talent pipeline of underrepresented populations by executing K-12 outreach programs around STEM disciplines.

Examples of current programs

Outreach programs to showcase representative role models	Society of Hispanic Professional Engineers Northern Virginia Urban League	Programs like *Noche de Ciencias,* hosted by the Society of Hispanic Professional Engineers, and *ASTEAM* (Aviation, Science, Technology, Engineering, Art, and Mathematics) hosted by the Northern Virginia Urban League expose children to STEM activities alongside representative role models
Out-of-school enrichment efforts	Boolean Girl GEMS	Programs like Boolean Girl and Girls Excelling in Math and Science (GEMS) provide structured programs and community events to inspire young girls to explore STEM fields and learn valuable skills like coding
Structured programs to expose and prepare students for STEM careers	GEORGE MASON UNIVERSITY	Females of Color Underrepresented in STEM (FOCUS) provides a week-long summer camp for dozens of rising 6th, 7th, and 8th-grade girls who learned how to use critical thinking for fun and creative problem solving activities involving technology, engineering, forensic sciences, and mathematics
	NOVA Northern Virginia Community College GEORGE MASON UNIVERSITY	NOVA's Early Identification Program (EIP) provides access to educational resources for middle and high school students who will be the first in their families to attend a college or university. Founded over 20 years ago, over 600 enrolled students are actively pursuing higher education due to funding from our corporate alliances, individual donors, and our partnership with seven local public school systems in Northern Virginia

Future proposals
We acknowledge that we cannot do this on our own. We plan to expand partnerships with organizations that have a proven track record of increasing minority participation and improving minority STEM retention scores, such as Girls Who Code, Black Girls Who Code, and Project Alloy, by promoting these organizations and co-sponsoring programming in schools and community centers across the region. Furthermore, our school systems continue to invest in structured programs like the Young Scholars in Fairfax County that target gifted K-8 students in historically underrepresented populations and provides holistic programming to foster and support their academic ambitions.

2. Ensure students have the support and resources to start and complete STEM programs at higher education institutions

Target Outcome

Increase the quality and production of minority populations in the STEM fields by encouraging and supporting underrepresented groups in STEM programs at institutions across NOVA.

Examples of current programs

Community college	NOVA Northern Virginia Community College	Northern Virginia Community College Assisting Females in Technology (aFit) supports underrepresented groups in completing their studies and entering the workforce.
On-campus affinity groups	SWE Society of Women Engineers — Society of Hispanic Professional Engineers — NSBE PROFESSIONALS	Social and professional groups at our region's top universities ensure that future engineers of all races and ethnicities find the support, representation, and guidance that is so critical to ensuring students complete their studies on time and, more importantly, find fulfillment in their educational (and professional) experiences. George Mason University's School of Engineering, for example, is home to the Louis Stokes Alliance for Minority Populations (LSAMP), National Society of Black Engineers (NSBE), Society of Hispanic Professional Engineers (SHPE), and Society of Women Engineers (SWE).
Targeted scholarship programs	GEORGE MASON UNIVERSITY — VIRGINIA TECH — NOVA Northern Virginia Community College	Scholarship programs focused on increasing the numbers of underrepresented minorities include examples like the following: **GMU's Xerox Technical Minority Scholarship Program** ensures students have the financial resources needed to complete their studies in specific fields like computing and computer science, laser optics, and engineering. **Virginia Tech Network for Engineering Transfer Students (VT-NETS)** will support over 300 scholarships through 2022 for low-income students in community colleges like NOVA prior to and following transfer to Virginia Tech to pursue a career in the engineering field.

Proposed programs

Institutions across the region are focused on increasing the resources and support available to minority and underrepresented students interested in STEM disciplines and careers. To better understand these challenges, our institutions are undertaking an ambitious effort to build the dataset to map factors, influence academic achievement differentials between engineers from different demographic groups, and develop targeted solutions to each obstacle.

One example is the partnership between UVA, LMI Research Institute (LMI), and the Commonwealth Center for Advanced Logistics Systems (CCALS) to develop a data-driven approach to eliminating the achievement gap in STEM fields:

Vision: Elimination of the achievement and attrition gap for under-represented minorities and female students in STEM fields.

Approach: Partnered with LMI, the Office of Diversity and Engagement in the University of Virginia (UVA) School of Engineering and Applied Science has begun a comprehensive, longitudinal research project to understand these diversity issues affecting STEM education and what it will take to eliminate the achievement gap to address this national security issue.

Desired outcomes: The program envisions a holistic approach to understanding, tracking, and intervening to ensure all students are successful. From predictive models and dashboards that alert faculty and administrators to potential obstacles in real-time to interventions that incorporate both light- and heavy-touch approaches, this program seeks to take a data-driven approach to solving a critical problem for our country.

As the drivers of the achievement gap becomes better understood, our institutions will continue refining and crafting innovative solutions to ensure every student succeeds, no matter their background or circumstances.

3. Support continuing education and professional development within the workforce

Target outcome
Encourage nontraditional populations to acquire the education and skills to transition into the tech field while also supporting existing tech workers to build community and support within the field.

Current efforts
Across the region, organizations across the public, private, and social sectors are hard at work supporting existing workers in building communities within the IT industry and also reaching out to underrepresented groups to equip them with the skills and resources needed to make the transition into IT. Examples include:

Community building within underrepresented groups	CIT & MACH37 Uniting Women in Cyber Leadership. Innovation. Inclusion.	Programs like **Uniting Women in Cyber** celebrate the success of women leaders thriving in the cybersecurity ecosystem and address issues that may be preventing more women from reaching critical leadership roles. The Center for Innovative Technology and MACH37 bring together partners from business, government, academia, investment, and nonprofit institutions at this event.
Supporting skills acquisition for adults	SKILLSOURCE GROUP / GREATER WASHINGTON COMMUNITY FOUNDATION	The **Northern Virginia IT Employment (NVITE) Partnership** provides unemployed, underemployed, and low-income jobseekers with coaching and on-the-job skills training to launch them into entry-level Computer User Support Specialist careers.
	GA GENERAL ASSEMBLY	Programs offered by private providers like **General Assembly's Learn and Earn** provide full financing for underrepresented students to complete their 14-week Web Development course.
Expanding educational opportunities to underrepresented groups	NOVA Northern Virginia Community College	The **Credentials to Careers** partnership with nonprofit workforce development organizations and local IT employers provides training programs leading to credentials and a career in IT for dislocated workers and other adult workers (unemployed or underemployed, low-wage, dislocated, military or veteran).

NOVA's diversity is a point of pride for our community. But to ensure that our minority populations thrive, rather than just survive, we intend to build a robust network of opportunities and engagement in the STEM fields, leading to future careers in tech.

Starting in pre-K, we want to create an inclusive environment in which every child believes that he or she can achieve anything, even if that dream is to become a NASA astronaut. Through high school and college programs that provide financial and academic support as well as support communities, we hope to encourage a cadre of minority students to pursue STEM degrees and careers. Through building minority-oriented professional networks and incubators, we intend to ensure that our Virginian tech community has minority representation from the entry levels to the senior levels.

A2.d. Specialized tech talent availability and growth - Please provide specialized tech talent availability for (i) machine learning specialists, (ii) UX/UI designers, and (iii) hardware engineers, as well as year-to-year trends for all three of these specialties. Please also describe the companies in your community currently employing that talent.

Though D.C. will always be synonymous with the federal government, the region is a hotbed for tech talent.

With the densest concentration of tech talent in the U.S. and the second most number of tech workers, tech is embedded in the region's DNA. The region's deep pool of talent cuts across all tech fields, including the most in-demand specialized skills like machine learning, UX/UI design, and hardware engineering. Not only are we attracting skilled talent in these fields, we are attracting people who come here because they want to make a difference in the world. Whether attracting top talent, or producing it from one of the best public university systems in the country, the Greater D.C. region has the talent Amazon needs now and in the future.

Furthermore, as tech changes the way communities, people, and even computers interact, being co-located with the nation's policymakers will provide differentiated access to both policy and thought leaders as well as branches of science doing cutting-edge work leveraging these specialized skills. Take machine learning for an example. Machine learning specialists are helping innovative firms like Capital One apply these skills to build a next-generation financial firm, research institutions like the National Institutes of Health develop the next generation of personalized medicines, and cybersecurity startups like Deep Learning Analytics develop groundbreaking radar technologies to help keep the world safer.

Across fields and sectors, D.C.'s tech talent, especially those in specialized fields, are literally changing the world.

Machine learning

The D.C. MSA's base of over 3,300 data scientists is among the largest in the country, double that of its nearest HQ2 competitor, New York City.

Responding to the growing needs of our most sophisticated businesses, our region's talent base with machine learning skills has grown rapidly, increasing 12% from 2,827 to 3,156 from 2016-2017. Given the difficulty in estimating the number of tech jobs in general, and especially more specialized skills, we laid out a three-part approach to estimating the number of machine learning specialists in the region:

- First, we look at the number of data scientists in the region (we have the most)

- Second, we look at the number of people who self-report machine learning skills on social profiles monitored by EMSI

- Last, we estimate the number of data scientists **with** machine learning

Data scientists

Computer and Information Research Scientists
Jobs, 2017

Region	Jobs
Greater D.C.	3,390
New York-Newark-Jersey City, NY-NJ-PA	1,491
Los Angeles-Long Beach-Anaheim, CA	1,087
Boston-Cambridge-Newton, MA-NH	1,082
Chicago-Naperville-Elgin, IL-IN-WI	807
Austin-Round Rock, TX	635
Dallas-Fort Worth-Arlington, TX	556
Atlanta-Sandy Springs-Roswell, GA	431
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	333
Denver-Aurora-Lakewood, CO	139
Indianapolis-Carmel-Anderson, IN	110
Pittsburgh, PA	89
Raleigh, NC	88
Miami-Fort Lauderdale-West Palm Beach, FL	83
Nashville-Davidson--Murfreesboro--Franklin, TN	47
Columbus, OH	38

Source BLS

Individuals listing machine learning skills

Machine Learning skills in Washington-Arlington-Alexandria MSA

Year	Figure
2016	2,827
2017	3,156
Growth	*11.6%*

Data scientists with machine learning skills

Data Scientists with machine learning skills
Bachelor's degree or higher, Metro areas

Metro area	Value
New York, NY	528
Boston, MA	201
Chicago, IL	146
Los Angeles, CA	145
Greater D.C.	143
Austin, TX	72
Atlanta, GA	65
Dallas, TX	51
Denver, CO	45
Philadelphia, PA	40
Pittsburgh, PA	23
Columbus, OH	10
Nashville, TN	8
Indianapolis, IN	
Miami, FL	
Newark, NJ	
Raleigh, NC	
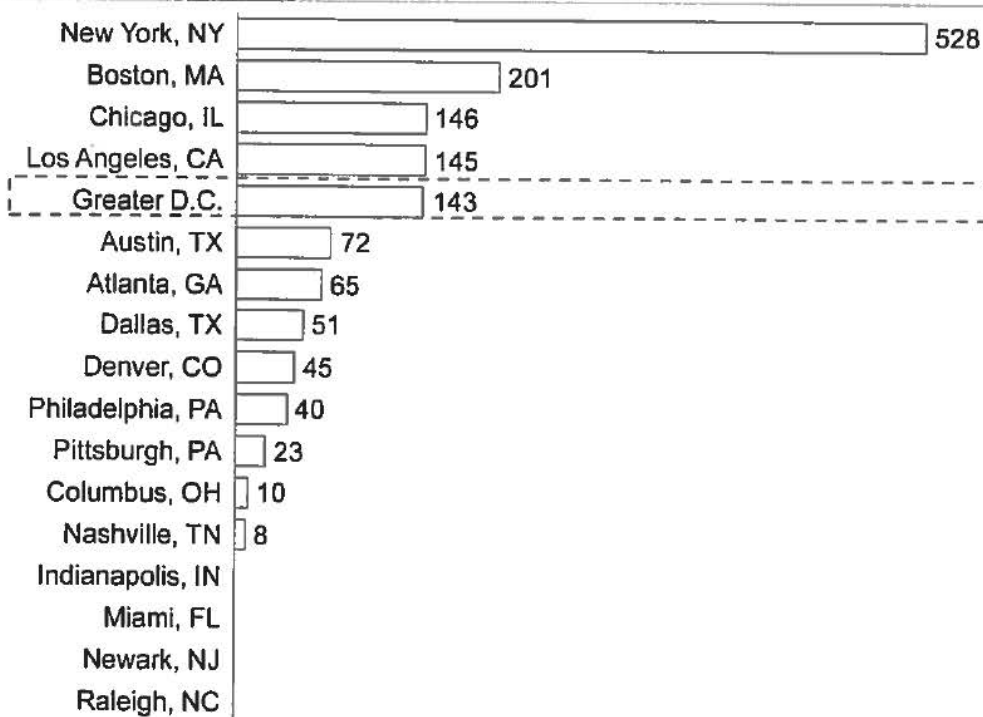
Source: EMSI Workforce Insights

Companies hiring data scientists span sectors, including large government contractors, major tech firms, and even world-renowned research institutions:

Top employers of individuals with machine learning skills

	EMSI profiles	Percent
University of Maryland	186	5.9%
George Mason University	98	3.1%
National Institutes of Health	79	2.5%
Booz Allen Hamilton Holding Corporation	52	1.6%
The Mitre Corporation	50	1.6%
Capital One Financial Corporation	46	1.5%
George Washington University	46	1.5%
Johns Hopkins University	44	1.4%
Naval Research Laboratory	31	1.0%
Deloitte LLP	28	0.9%
Total listed in this table (% of all profiles)	660	21.0%

Source: EMSI

Additional employers include:

DXC.technology   GENERAL DYNAMICS   LOCKHEED MARTIN   CACI   UNISYS

leidos   NORTHROP GRUMMAN   BAE SYSTEMS INSPIRED WORK   CSRA   accenture

SAIC.   amazon   VENCORE   ManTech   IBM

ENGILITY Engineered to Make a Difference   FannieMae.   CGI   Raytheon   Freddie Mac We make home possible

NOVA maintains a large data scientist community through organizations like the Data Community (DC2), which serves as a central hub for data scientists throughout the Greater D.C. region. Having grown from 1,000 to 25,000 members within the last six years, the organization now facilitates more than a dozen meetup groups, including Data Visualization D.C., Data Science D.C., Data Wranglers D.C., and NOVA Data Science groups.

The pipeline for data scientists and machine learning specialists, in particular, draws from a presence of strong higher education institutions within the region, but also attracts talent from the top institutions up and down the East Coast.

Top producers of individuals with machine learning skills

	EMSI profiles	Percent
University of Maryland, College Park	472	15.0%
George Mason University	315	10.0%
George Washington University	189	6.0%
Johns Hopkins University	143	4.5%
University of Virginia	101	3.2%
Virginia Polytechnic Institute and State University	95	3.0%
Carnegie Mellon University	82	2.6%
Georgetown University	79	2.5%
Cornell University	64	2.0%
Georgia Institute of Technology	64	2.0%
Total listed in this table (% of all profiles)	1,604	50.8%

Source: EMSI

Organizations such as The Institute for Statistics Education are also actively growing the talent base, offering online courses in machine learning and certificates in data science that include machine learning as a core course. Other institutes and training facilities, including Data Society, Metis, Thinkful, and Data Incubator, continue to deepen, connect, and advance the data scientist community in the D.C. region.

ıllData Community DC — Data Community D.C. is an organization committed to connecting and promoting the work of data professionals in the National Capital Region by fostering education, opportunity, and professional development through high-quality, community-driven events, resources, products, and services.

statistics.com
THE INSTITUTE FOR STATISTICS EDUCATION — Based in Arlington, VA and established in 2002, The Institute for Statistics Education at Statistics.com is the leading provider of online education in statistics, analytics, and data science with four certificate programs and 100+ courses at novice, intermediate, and advanced levels.

Deep Learning Analytics provides a useful case study of how the public and private sectors interact to push technological boundaries, leveraging the deep bench of high-quality talent in the D.C. area.

DEEP LEARNING
A N A L Y T I C S

Deep Learning Analytics was founded in 2013 with the aim of building machine learning products in niche domains in energy, defense, education, social policy, biology, and e-commerce by drawing on better data, better machine learning, and better insights. Founded by the entrepreneur John Kaufhold after leaving the National Institute for Health, the small, two-person company beat out major contractors like Boeing, Raytheon, Northrop Grumman, and Lockheed Martin to win a DARPA open bid to use deep learning techniques to improve radar technologies. After winning the first phase, the company was awarded a Phase II contract in July 2017 and continues to innovate and grow.

UX/UI designers

Washington, D.C.'s base of UX/UI designers continues to grow rapidly to meet the demands of a diverse array of employers.

More specifically, the number of UX designers grew from 4,333 to 4,966 individuals from 2016-2017, almost twice as fast as the larger base of UI designers, which grew from 4,846 to 5,240 individuals over the same period.

UX Designers

Year	Figure
2016	4,333
2017	4,966
Growth	*14.6%*

Source: EMSI

UI Designers

Year	Figure
2016	4,846
2017	5,240
Growth	*8.1%*

Source: EMSI

When looking at the broader category of web developer using BLS data, the D.C. metro area contains the second-highest number of web developers on the East Coast, trailing only the massive New York-Newark-Jersey City metro area but well ahead of more similarly sized populations like Boston and Philadelphia metro areas.

Web developers
Jobs, 2017

Metro area	Jobs
New York-Newark-Jersey City, NY-NJ-PA	21,486
Los Angeles-Long Beach-Anaheim, CA	16,370
Greater D.C.	9,118
Chicago-Naperville-Elgin, IL-IN-WI	8,364
Dallas-Fort Worth-Arlington, TX	6,596
Boston-Cambridge-Newton, MA-NH	6,322
Miami-Fort Lauderdale-West Palm Beach, FL	5,817
Atlanta-Sandy Springs-Roswell, GA	5,765
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	5,498
Austin-Round Rock, TX	3,465
Denver-Aurora-Lakewood, CO	3,414
Raleigh, NC	1,731
Indianapolis-Carmel-Anderson, IN	1,711
Nashville-Davidson--Murfreesboro--Franklin, TN	1,694
Pittsburgh, PA	1,481
Columbus, OH	1,436

Source: BLS

The supply of talent hails from a variety of educational backgrounds with over 60% educated at regional institutions such as University of Maryland and George Mason, ~20% educated at Virginia institutions such as University of Virginia and Virginia Tech, and 8% from Northern Virginia Community College.

Top producers of UX designers

	EMSI profiles	Percent
University of Maryland, College Park	311	6.30%
George Mason University	301	6.10%
George Washington University	168	3.40%
University of Maryland-University College	162	3.30%
Virginia Polytechnic Institute and State University	150	3.00%
Strayer University	138	2.80%
Northern Virginia Community College	128	2.60%
Unspecified college	119	2.40%
Johns Hopkins University	100	2.00%
James Madison University	86	1.70%
Total listed in this table (% of all profiles)	1,663	33.6%

Source: EMSI

Top producers of UI designers

	EMSI profiles	Percent
George Mason University	419	8.00%
University of Maryland, College Park	319	6.10%
Virginia Polytechnic Institute and State Universi	219	4.20%
James Madison University	146	2.80%
George Washington University	144	2.70%
University of Maryland, Baltimore County	143	2.70%
Northern Virginia Community College	133	2.50%
The Art Institute of Washington	112	2.10%
Montgomery College	101	1.90%
University of Virginia	98	1.90%
Total listed in this table (% of all profiles)	1,834	34.9%

Source: EMSI

On the demand side, the employer base is well-balanced among major government contractors and more traditional B2B and B2C companies, including several leading professional services firms.

Top employers of UX designers

	EMSI profiles	Percent
Capital One Financial Corporation	54	1.10%
Booz Allen Hamilton Holding Corporation	53	1.10%
Federal National Mortgage Association	53	1.10%
Swift Transportation Company	41	0.80%
Time Warner Inc.	40	0.80%
Hewlett-Packard Company	37	0.70%
International Business Machines Corporation	36	0.70%
General Dynamics Corporation	35	0.70%
ACCENTURE, INC.	33	0.70%
Deloitte LLP	30	0.60%
Total listed in this table (% of all profiles)	412	8.3%

Source EMSI

Top employers of UI designers

	EMSI profiles	Percent
Booz Allen Hamilton Holding Corporation	80	1.50%
Capital One Financial Corporation	56	1.10%
ACCENTURE, INC.	33	0.60%
Lockheed Martin Corporation	31	0.60%
Deloitte LLP	30	0.60%
Marriott International, Inc.	30	0.60%
Time Warner Inc.	30	0.60%
International Business Machines Corporation	28	0.50%
Sapient Corporation	26	0.50%
CGI	23	0.40%
Total listed in this table (% of all profiles)	367	7.0%

Source: EMSI

Outside the major corporations and institutions, fast-growing companies like GoCanvas and others are employing UX/UI designers throughout the region.

gocanvas

GoCanvas, a Reston, Virginia-based mobile platform, works with customers around the world like Pepsi and Redbull to replace their paper forms with simple mobile apps. Capitalizing on the D.C. region's vast talent pool for online designers, the company now employs over 100 and serves thousands of companies throughout more than 70 countries.

Several other established and/or fast-growing UX agencies were recently spotlighted by the ratings agency Clutch.co, providing a glimpse into smaller firms employing this talent.

BRAVEᵁˣ
Brave UX

Mindgrub

WillowTree, Inc.

Echo&Co

shockoe
Shockoe

Mobomo

DMI (Digital Management Inc.)

WDG

viget
Viget

SAVVY
Savvy Apps

centretek
Centretek

Nclud

Hardware engineers

The D.C. MSA's base of hardware engineering talent works for employers across sectors developing next-generation technologies and products for businesses, institutions, and consumers.

The region's base of over 3,000 hardware engineers is second-highest among the Top 20 peers, trailing only Los Angeles.

Hardware engineers
Jobs, 2017

Metro	Jobs
Los Angeles-Long Beach-Anaheim, CA	3,399
Greater D.C.	3,126
Boston-Cambridge-Newton, MA-NH	2,566
Dallas-Fort Worth-Arlington, TX	1,945
New York-Newark-Jersey City, NY-NJ-PA	1,493
Denver-Aurora-Lakewood, CO	1,424
Chicago-Naperville-Elgin, IL-IN-WI	1,173
Atlanta-Sandy Springs-Roswell, GA	1,170
Raleigh, NC	855
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD	588
Austin-Round Rock, TX	516
Nashville-Davidson--Murfreesboro--Franklin, TN	499
Miami-Fort Lauderdale-West Palm Beach, FL	356
Pittsburgh, PA	228
Indianapolis-Carmel-Anderson, IN	142
Columbus, OH	89

Source: BLS

Beyond just occupations and titles, a scan of profiles through EMSI's Workforce Insights tool identified over 10,000 individuals reporting hardware engineering skills in 2017, growth of nearly 16% from the previous year.

People with hardware engineering skills in DC MSA

Year	Figure
2016	8,945
2017	10,333
Growth	*16%*

Source: EMSI

The D.C. area benefits from strong talent production pipelines from metro universities like the University of Maryland and George Mason University, which collectively educated 25% of the talent pool (EMSI profiles); from statewide institutions like Virginia Tech, Old Dominion University, and the University of Virginia (#7, T-#44, and T-#44 in number of computer engineering degrees awarded 2015-2016. ASEE); and from smaller, more accessible institutions like Northern Virginia Community College, Strayer University, and University of Maryland-University College, whose accessible options provided quality educational experiences for approximately 20% of the talent base (EMSI).

Top producers of talent with hardware engineering skills, DC MSA

	EMSI profiles	Share
George Mason University	1,090	10.5%
University of Maryland-University College	969	9.4%
Northern Virginia Community College	738	7.1%
Strayer University	681	6.6%
University of Maryland, College Park	670	6.5%
George Washington University	321	3.1%
Virginia Polytechnic Institute and State University	315	3.0%
Montgomery College	282	2.7%
University of Phoenix	271	2.6%
Prince George's Community College	198	1.9%
Total listed in this table (% of all profiles)	5,535	53.4%

Source: EMSI

On the employer side, the largest sources of demand include the big federal contractors like Lockheed Martin and General Dynamics, large federal departments like the U.S. Patent and Trademark Office and U.S. Army, and major regional research institutions such as George Mason University.

Top employers of people with hardware engineering skills, DC MSA

	EMSI profiles	Share
Lockheed Martin Corporation	112	1.1%
Booz Allen Hamilton Holding Corporation	104	1.0%
General Dynamics Corporation	102	1.0%
United States Patent and Trademark Office	87	0.8%
CACI	76	0.7%
George Mason University	71	0.7%
Northrop Grumman Corporation	69	0.7%
Accenture	68	0.7%
United States Army	65	0.6%
University of Maryland	56	0.5%
Total listed in this table (% of all profiles)	810	7.8%

Source: EMSI

Outside of the largest employers, the Greater D.C. region (and NOVA, in particular) is home to a number of fast-growing, innovative companies like OneWeb that employ hardware engineers to design the next generation of consumer and business products and services.

OneWeb
ACCESS FOR EVERYONE

The recipient of a $1.2B fundraising round in 2016 from SoftBank, the Arlington-based satellite company OneWeb hopes to manage a network of more than 600 low-orbit satellites providing affordable, high-speed internet access around the globe. Employing over 200 full-time employees (with hundreds of other engineers on contract around the world), the fast-growing company is eyeing both government and mobile network operators as major customers... and its location within D.C. Metro offers a compelling picture of how the region provides both a talent and customer advantage to companies of all shapes, sizes, and types.

The Greater D.C. region's tech scene consists of a broad array of companies employing specialized tech talent, including companies, organizations, and research labs of all sizes.

Companies have found a deep pool of talent in the Greater D.C. region, but they also continue to invest in partnerships with our universities, community colleges, and even K-12 districts to ensure that the next-generation of computer scientists and engineers have the exact (and most relevant) skills needed. For specialized skills, our companies can not only draw from a robust talent pipeline but also attract talent from up and down the East Coast, from across the country and around the world.

- **Consumer-oriented businesses**: Corporations such as Capital One and Uber Technologies benefit from the region's deep talent pool across a range of needs, from designing unique customer experiences to developing the next generation of products. For instance, Capital One Labs brings together product managers, data scientists, web developers, and others in Arlington to build the future of banking. These companies have a rich base of data scientists to draw upon already present in the Greater D.C. region, but can, and will continue to, draw upon graduates with specialized skills from up and down the East Coast, including Virginia Tech, Carnegie Mellon, MIT, and Georgia Tech.

- **Defense-oriented firms**: Large organizations such as General Dynamics and Leidos, and smaller startups like Deep Learning Analytics, will continue needing large pools of talent with skills in cybersecurity, big data analytics, and artificial intelligence, among other skills. The availability of high-quality talent working at the large defense contractors has created a rich startup ecosystem where entrepreneurs leave to start their own firms and then tap into their network to find their own employees. Increasingly, these contractors are also sourcing talent from outside the top-tier universities to fill needed tech roles. Partnerships throughout Virginia and the broader DMV region have been designed to develop the pipeline to meet both the depth and range of talent needed.

- **Large research organizations and universities**: The Greater D.C. region is home to a dense research ecosystem across a number of specialties, including health informatics. Organizations like the National Institutes of Health and Henry M Jackson Foundation's Gynecologic Cancer Center of Excellence (GYN-COE) draw from the talent being produced by the region's multiple top-tier universities. These organizations are increasingly relying on talent with big data analytics and machine learning skills to better understand the behavior of cancer cells, microbes, and other organisms as they continue making life-saving discoveries.

A3.a. Current efforts - What is your community currently doing to support venture capital investment? Please include the presences of venture capital firms in your community, 5-year trends in venture capital investment, and size of start-up community in your community.

Capital in the Capital

The Greater D.C. region, and the NOVA localities, in particular, have made it a priority to ensure fast-growing companies have access to the financial resources, mentorship, and community support that define great tech ecosystems. Long known for innovative companies developing cutting-edge technologies for the defense industry, the region has dramatically diversified its technology scene, growing startups as diverse as ed-tech to biotech to satellites.

Northern Virginia has pursued three primary strategies to attract venture capital dollars to the **region and to facilitate connections between those who** need capital and those who have it.

- Invest public dollars to catalyze private investment
- Facilitate connections between entrepreneurs and investors
- Raise awareness of the region as a premier destination for investment

The Commonwealth of Virginia has held a long-standing commitment to supporting and catalyzing private investment in innovative technologies.

The Center for Innovative Technologies (CIT) has been the primary vehicle for the Commonwealth but the recently authorized Virginia Research Investment Fund (VRIF) will add to the efforts to support investment in new technologies. The private sector, through vehicles like Inova Strategic Investments, also supports high-growth companies via both direct investments in companies and in like-minded venture capitalists.

Supported by the Commonwealth	CIT	**Growth Acceleration Program (GAP).** Commonwealth-supported vehicle focused on high-potential, seed-early-stage companies. The program has provided seed funding for 170+ companies that has been leveraged to attract over $700M in private capital, a 29x multiple of private capital to public dollars. **Commonwealth Research Commercialization Fund (CRCF).** Commonwealth-backed vehicle has invested over $20M in 272 companies that have in turn received over $100M in follow-on investments in 2017 alone.
VRIF	Virginia Research Investment Fund	**Virginia Research Investment Fund (VRIF).** Recently authorized by the General Assembly, which designated $12 million for the research fund and $29 million in bonding authority to support the commercialization of university IP assets
Supported by industry	INOVA	**Inova Strategic Investments (ISI).** Through the non-profit Inova Health System, invests directly in early to mid-stage companies that are interested in strategic partnerships. This fund also works collaboratively with, and invests in, health and related technology venture funds.

Organizations such as the Mid-Atlantic Venture Association have been instrumental in connecting high-growth enterprises to the funding community across classes—from venture capital to family offices, private equity firms, and more.

In addition to these private organizations, the region has seen significant venture capital activity over the past several years. Recognizing this growing success, public and private partners collaboratively developed *Virginia is for Entrepreneurs*, a platform that connects entrepreneurs seeking financing with investors looking for opportunities, and offers support resources for entrepreneurs.

Operating as an independent nonprofit for 30 years, the nonprofit organization has supported over 3,000 technology companies in finding the resources necessary to grow. The companies that the organization has supported over the last 30 years include the likes of America Online, Blackboard, and, most recently, NavHealth and ThreatQuotient

This program—still in a pilot phase—simplifies and streamlines the process for investors seeking companies that fit their investment profile, thereby encouraging them to invest in the Virginia-based businesses on the platform. Simultaneously, *Virginia is for Entrepreneurs* evaluates companies based on a variety of categories to connect entrepreneurs with the investors and supporters who are best-positioned to help them. The platform is poised to grow to become a valuable resource for investors across the state and drive additional venture capital investment within the region.

Local pitch events like Venture Forum, CONNECTpreneur, Cooley Capital Call, MAVA Tech Buzz, Southeast Venture Conference, and TechBreakfast are also held throughout the Northern Virginia region, facilitating deep connections between entrepreneurs and investors. MAVA Tech Buzz, for instance, has provided a platform for TechBUZZ Seed Stage Presenters to raise more than $60M in post-presentation funds since its start in 2011.

At a regional level, the economic development teams from Alexandria, Arlington, Fairfax, and Loudoun are teaming up this May at Collision Conference, a fast-growing technology conference in New Orleans.

Both on the conference floor and at our social event, this regional marketing effort will showcase our strengths as an innovative and diverse region to the startup and tech talent community attending the conference.

COLLISION

Recognizing that founders benefit from a large network of investors, partners, and mentors, NOVA has created an opportunity for local innovators to attend Collision to showcase their companies. The goal is to match Northern Virginia's emerging startups with the connections, funding, and partners they need to reach the next stage of their business. During Collision, all four jurisdictions will also host an event to bring together conference attendees, including entrepreneurs, investors, media, and other members of the startup community.

High-growth companies have found a robust base of private capital ready, willing, and eager to invest in companies from angel rounds to exit and beyond.

This flow of Venture Capital investments, in particular, has been growing rapidly with companies attracting capital from around the corner to around the globe. Just last year, the Greater D.C. region attracted over $1.5B in VC investments, spread across 205 companies covering every sector from healthcare (e.g., Aledade) to commercial services/hardware (e.g., Mapbox) to software (e.g., EverFi and Fugue).

Washington-Arlington-Alexandria, DC-VA-MD-WV MSA
VC investments and deal count

Capital invested
$M

Deal count
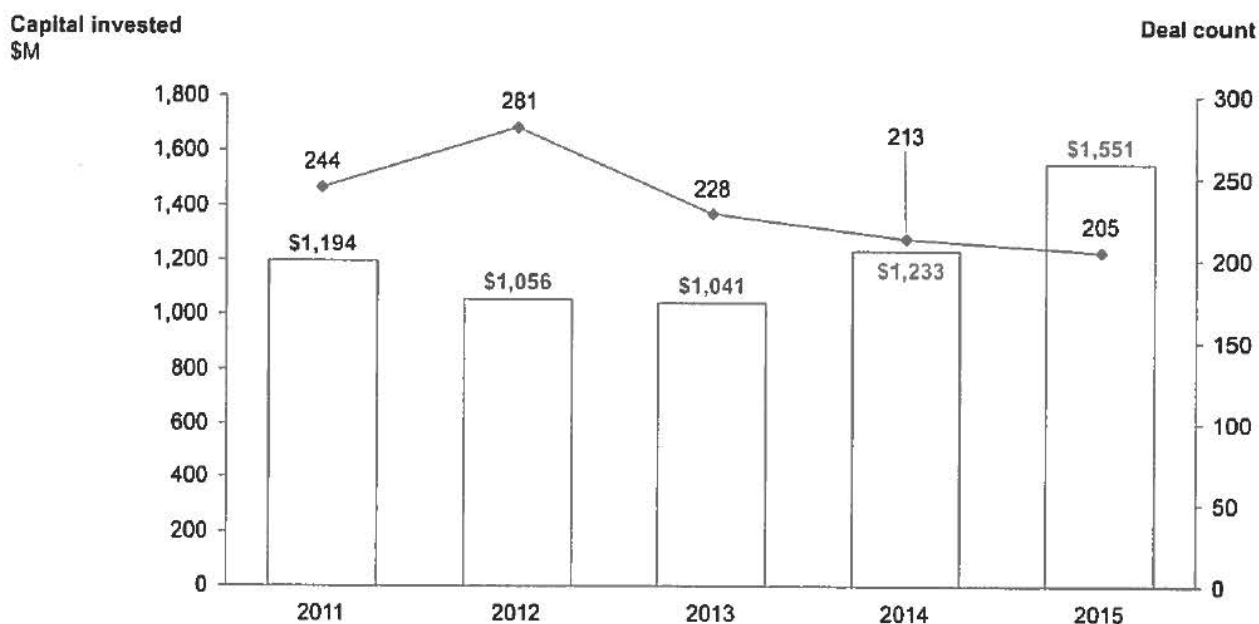
Source: Pitchbook, as of December 31, 2017

According to a recent PwC / CB Insights Money Tree Report, the most active investors in the D.C.-area were led by regionally-based powerhouses like New Venture Associates (10 deals in 2017), Grotech Ventures (seven deals), and SWaN & Legend Venture Partners (six deals).

The sources of investments are equally as diverse, coming from places as far as Japan (e.g., SoftBank's late 2016 $1.2B investment in OneWeb) and Australia (e.g., Australia's Future Fund's investment in Fugue) to nearby major regional investors, ranging from more traditional VC investment firms like Paladin Capital Group to global wealth managers and investors like The Carlyle Group to massive federal agencies (with major investment dollars) behind the most innovative and frontier technologies, like the U.S. Department of Energy and in-Q-Tel.

An April 2016 review by the magazine highlighted the depth and diversity of the D.C. investor landscape... and this list leaves off the Federal Government, one of the biggest investors in the world.

Most Active Venture Capital Firms Based In D.C.

Investor Name	Stage	Focus	Number of Investments	Number of Exited Companies	Location
Columbia Capital	Series A through C	Wireless, broadband, media, and enterprise information tech	169	39	Alexandria, Va.
Novak Biddle Venture Partners	Seed through Series D	Early-stage information technology startups	115	32	Bethesda, Md
Core Capital Partners	Series A through D	Technology	80	25	Washington, D.C.
New Atlantic Ventures	Seed through Series B	Cybersecurity, mobile, e-commerce and digital media	87	18	Reston, Va.
Revolution	Seed, Series A through D	Disruptive consumer tech	59	8	Washington, D.C.
Middleland Capital	Seed, Series A	Technology	56	7	Washington, D.C.
NextGen Venture Partners	Seed, Series A	Consumerization of the enterprise, tech enabled consumer products	27	5	Washington, D.C.
Fortify Ventures	Seed, Series A, Series B	Mobile, Social Media, Curated Web	40	5	Washington, D.C.
Updata Partners	Series A through C	Software and software-enabled businesses	62	19	Washington, D.C.
Strategic Cyber Ventures	Seed, Series A	Cybersecurity	4	0	Washington, D.C.
Savano Capital Partners	Series A through Series D	Enterprise software, infrastructure, and data-driven businesses	35	17	Chevy Chase, Md.
Grotech Ventures	Seed through Series B	Technology	128	21	Vienna, Va

Angel Investor Networks

Investor Name	Number of Investments	Number of Exited Companies	Location
Dingman Center Angels	72	7	College Park, Md.
New Dominion Angels	28	3	Washington, D.C.
New Vantage Group	6	3	McLean, Va.
K Street Capital	7	2	Washington, D.C.
Bellingham Angel Organization	4	1	Washington, D.C.

Family Offices

Investor Name	Number of Investments	Number of Exited Companies	Location
Stardust Venture Partners	9	3	Washington, D.C.
Snowasis Capital, LLC	5	N/A	Reston, Va.

Private Equity Firms				
Investor Name	Focus	Number of Investments	Number of Exited Companies	Location
The Carlyle Group	Health Care, Software, Web Hosting	172	54	Washington, D.C.
Oxford Finance Corporation	Biotechnology, Health Care, Health and Wellness	79	39	Alexandria, Va.
Paladin Capital Group	Software, Enterprise Software, Security	90	26	Washington, D.C.
International Finance Corporatic	Finance, Clean Technology, Education, Health, Consumer Internet	87	10	Washington, D.C.
American Capital	Security, Health Care, Games	30	10	Bethesda, Md.
NGP Energy Technology Partne	Clean Technology, Renewable Energies, Specialty Chemicals	16	4	Washington, D.C.
Perseus	Biotechnology, Hardware + Software, Software	24	3	Washington, D.C.
Capital Trust Ventures	Software	4	2	Washington, D.C.

Though the majority of tech funding conversations focus on private capital, especially VC, the Greater D.C. region is blessed to have a distinct strength in leveraging public dollars to drive innovation.

From federal labs to federal startup dollars, the public investment in Greater D.C. ventures deepens the region's base of available capital, leveraging multiples of private investment in every deal.

Federal labs	**MITRE**	The 101 federal labs across Virginia and Maryland are nearly four times California's 27 labs, the next-closest state. A recent TEConomy report tallied 2017 investments of $1.8B in Virginia's 11 (of 42 nationally) Federally Funded Research and Development Centers, which includes the National Security Engineering Center managed for the Department of Defense by MITRE.
Federal innovation dollars	DARPA	DARPA, NSF, In-Q-Tel, and a slew of other federal agencies and public organizations have contributed $3.7 billion in undiluted capital to companies researching and creating new technologies—many of these companies have been based in the Mid-Atlantic region.
Federal startup dollars	SBIR·STTR America's Seed Fund	Innovative Virginian companies have been adept at raising both private and public startup dollars over the years. For instance, in 2016, Virginia companies received ~$125M in federal funds for innovation—the third-most in the country—from the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (SBTT) programs.

Altogether, the Greater D.C.'s ability to deploy regional investment dollars, attract investors from near and far, and leverage federal investments to fund the best and most promising ideas and companies has contributed to the region's rapidly growing tech and startup ecosystem.

The Greater D.C. startup community is as diverse as the funding streams discussed above.

Greater Washington, D.C. now claims more than 1,000 startups covering a broad range of sectors, according to Entrepreneur.com. A 2017 survey of the startup community found nearly 30% of over 450 surveyed startups to be in the tech space.

This survey found our startup community to be as diverse as D.C.'s population:

- **Age**: approximately 50/50 split between startups founded by those under 35 years-old and those over that age

Fosterly 2017 Startup Census Report
Top Industries represented by 2017 revenue
Share of revenues reported by surveyed startups

Industry	Value
Information technology and services	29
Marketing and advertising	13
Other	12
Retail	8
Computer software	7
Food & beverage	7
Financial services	6
Environmental services	5
Internet	4
Computer and network security	3
Transportation/trucking/railroad	3
Events services	2
Research	2

Source: Fosterly 2017 Startup Census Report

- **Race and gender**: about one-third of startups were founded by minorities and ~30% of companies were started by women

- **Revenue streams**: only 11% of revenue was attributed to public-sector sales

Not only is our startup community representative of the diversity that is a hallmark of our population, the community is also among the most connected in the world. Our region has a seemingly endless list of meetup groups covering an array of niche topics. One of the meetups—the D.C. Tech Meetup has grown to over 22,000 members since 2011—now ranks as one of the largest meetups in the world.

Other notable meetups include:

Meetup	Members	Meetup	Members
D.C. Tech Meetup	22,421	Amazon Web Services (VA)	3,525
Data Science D.C.	10,304	NOVA Python	2,834
NOVA Makers	5,115	AWS D.C. Meetup	2,467
Internet of Things	4,840	Blockchain & cryptocurrency	560

In addition to the numerous Commonwealth-wide and regional efforts mentioned previously, each locality has also invested considerable time, attention, and resources to strengthening the tech-startup-VC community.

Alexandria	**BOOST**	A business acceleration program that helps startups grow and expand in Alexandria, BOOST's curriculum provides assistance to founders in evaluating their product, team, and business models. BOOST also gives them access to mentors, industry experts, and investors, as well as connections with the local market through the program's partnership with the Alexandria Economic Development Partnership. Through two cohorts, participating startups have raised over $2.7 million in investment, created 20 jobs, and generated over $700,000 in revenue.
	CAPITOL POST VETERANS · BUSINESS · PURPOSE	Capitol Post teaches military veterans and their spouses how to think and act like entrepreneurs, and provides the coaching, business acceleration programs and network, and office space to allow participants to test, de-risk, and achieve their business goals. The Capitol Post co-working space is also home to Bunker Labs DC, an accelerator for high-growth startups founded by veterans and military spouses. In 2017, Capitol Post offered 63 entrepreneurship programs to military veteran and spouse entrepreneurs.
Arlington	**STARTUP ARLINGTON**	This award-winning initiative is in its third year and gives the opportunity for a startup from outside the metro area to live, work, and scale their company in Arlington's backyard, along with a cash prize.
	Gazelle Grant program	In 2017, Arlington launched its first ever grant program designed specifically for fast growing startups, which helps bring down the cost of real estate related with an expansion or move-through grants.
Fairfax County	**Capital Attraction Program**	The program enhances the county's visibility as a location for entrepreneurs to start and grow their businesses by serving as a liaison between businesses and funding resources by making introductions, facilitating partnerships, and promoting events
Loudoun County	SMALL BUSINESS & ENTREPRENEURSHIP	A dedicated Small Business and Entrepreneurship program has been in place in Loudoun County since 2011 to foster opportunities for high growth startups and lifestyle businesses. The program serves to cultivate a culture of entrepreneurship and innovation in the community.
	LoudounSmallBiz	The online platform LoudounSmallBiz.org helps to aggregate and categorize these resources for entrepreneurs to access 24/7. Loudoun has been strategic about the investment into the right partners who will make a significant impact on small businesses; this includes the Mason Enterprise Center/Small Business Development Center-Loudoun.

High-growth companies in the Greater D.C. MSA have been able to attract growth capital from regional, national, and international investment firms.

Efforts across the three jurisdictions – D.C., Maryland, and Northern Virginia – have focused on deepening the pool of venture capital available to the D.C. region's startup community.

The Northern Virginia region, and the Commonwealth more broadly, have proposed several big ideas to support development of the venture capital community:

1. Develop a new, signature startup hub/accelerator
2. Launch a Commonwealth co-investment fund for VC promotion
3. Invest to support underrepresented groups in accessing startup funds
4. Develop an innovation brand

1. Develop a signature startup hub / accelerator
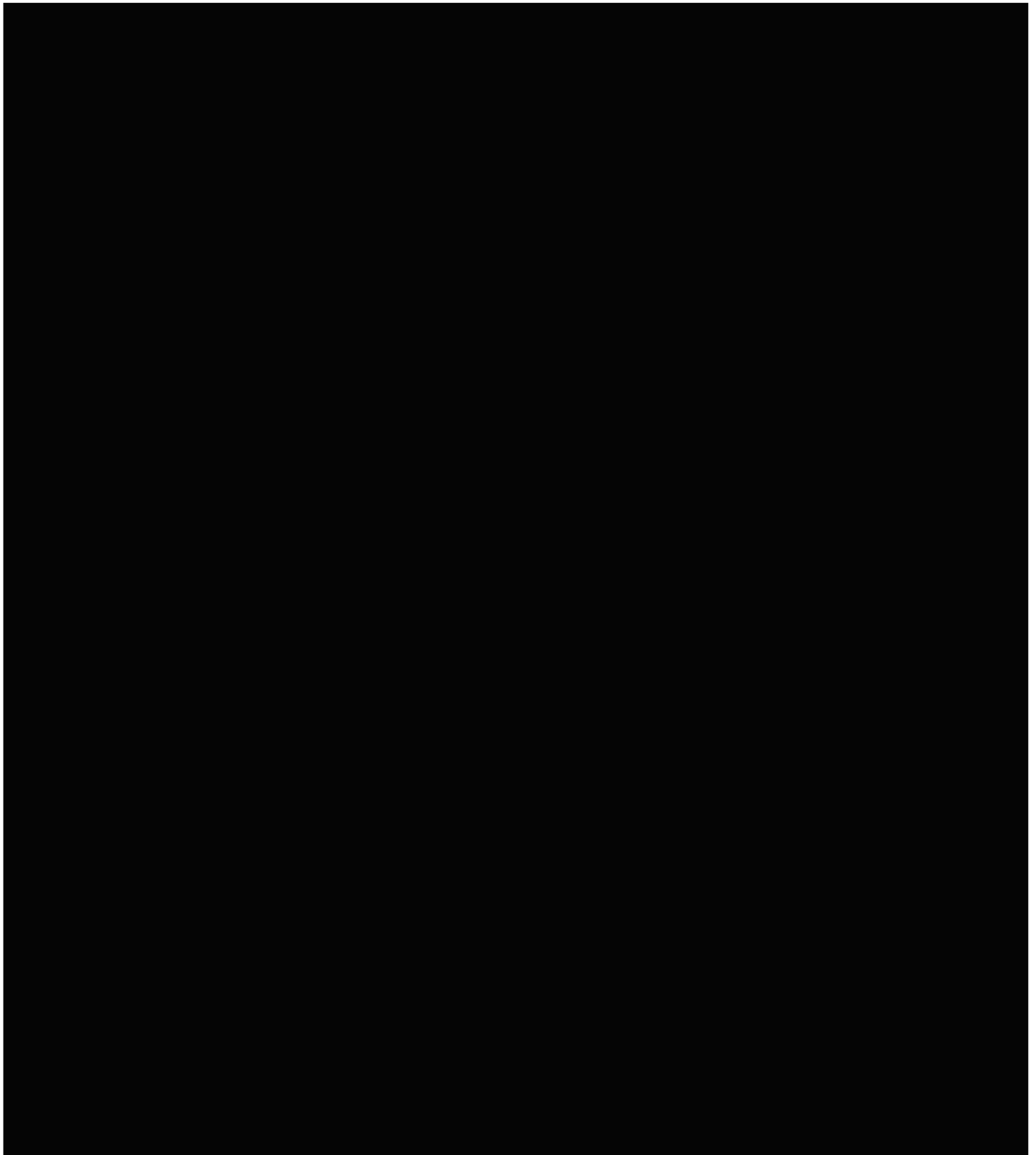
2. Launch Commonwealth co-investment fund for VC promotion

Target outcome

Co-invest long-term patient capital with dedicated commitment from the Commonwealth's pension fund to reduce overall cost of capital and spark additional early-stage investment in Northern Virginia companies.

How it will work

Virginia Retirement System (VRS) Investment Fund could create a dedicated pool of funding available to venture capital firms if they co-invest in the region's startups. Funding would focus on early-stage investment (e.g., seed or pre-Series A funding) and provided at below-market rates to lever up VC funds and reduce the cost of capital. Fund size and number of investment funds would be determined in partnership with participating VCs and the Virginia Retirement System (VRS) Investment Fund.

Co-investment and increasing availability of funds would create a 'double bottom line' for the region and the state, as it promotes economic development and financial objectives by:

- Catalyzing private investment in high-potential seed and early-stage companies
- Earning a positive return on investment
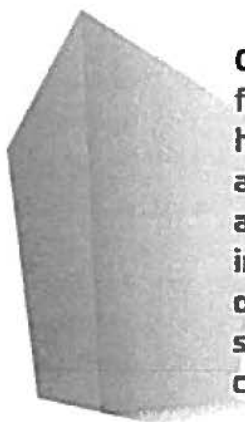
CIT's Growth Acceleration Program (GAP) funds have started to strengthen financial access for startups in Northern Virginia. Three investment funds have approximately $30M assets under management through ~$3M annual appropriations, committed through an investment team at CIT and an advisory board. Funding is pre-Series A and trenched in $50K-200K investment sizes. Program provides further access to a turn-key network of portfolio company teams, 200+ unique investment sources, Corporate strategic investors and acquirers, and deep regional, university, community, and venture industry affiliates.

3. Invest to support underrepresented groups in accessing startup funds

Target outcome
Increase resourcing and support available to entrepreneurs from underrepresented groups by addressing funding challenges.

How it will work
Virginia's Center for Innovative Technology announced in 2018 an early stage, venture investment fund specifically for entrepreneurs in underrepresented populations and veterans. CIT is setting aside $3M of its Growth Acceleration Program (GAP) fund for investment in Virginia startups led by founders from underrepresented populations. CIT is in the process of recruiting co-investment partners from venture funds and corporations in the region, and nationally, to join in this investment program.

4. Develop innovation brand

Target outcome
Concentrate a level of innovation investment around a specific theme, sector, or topic that creates a reputation for Virginia, attracting the best talent in the field and bringing in topical and interested investors.

How it will work
The state would support and build momentum behind a specific topic or subject matter area to increase expertise and become a hub for talent and investment in this space. Building on Virginia Research Investment Committee and other institutions' analyses of Virginia's innovation assets, the state would make a selective bet or bets to determine its focus of investment, and then orchestrate coordination in support from stakeholders in universities, local investment funds, startup hubs, etc.

To determine the themes or sectors it wants to invest in as its innovation brand, Virginia would consider:

- Regional and even state-wide innovation assets and how they support various sectors/ themes
- Corporate innovation trends and where NOVA's companies want to invest
- Availability of VC funds

In addition to the regional efforts mentioned previously, several localities also have proposals in the works that would support this community.

These include:

Arlington	 (pilot)	Program provides proof-of-concept funding to allow early stage companies to test their products within the municipal government.
Fairfax County	**Innovation District** (proposal)	Fairfax County's Economic Success Plan calls for creation of an innovation district or hub that would stimulate technology startups. The nucleus of an innovation district could be a collaborative co-working location such as Refraction in Reston. Refraction describes itself as a curated hub of creativity, collaboration, and innovation that helps businesses build more dynamic teams and grow their company. Currently, almost 30 businesses work at Refraction, which also hosts events that draw in entrepreneurs and other members of the business community, tech workers, and potential investors.
Loudoun County	*Citizinvestor*	The Loudoun County Department of Economic Development is currently investigating the feasibility for two programs to improve SEED funding: Citizinvestor, a platform for localized crowdfunding, and an angel forum for Loudoun businesses

A recent Inc5000 analysis by the Brookings Institution found that the D.C. metro area was home to the third-highest number of Inc5000 high-growth companies from 2011-2017.

These companies span sectors – especially Government Services (naturally), Business Services, and Engineering – and traditional tech (sub)industries such as computer software, hardware, and IT services. Private-sector leaders and public officials across the region have been working hand-in-hand to make sure the innovation sector including venture capital and startups continues to grow, thrive, and attract the next wave of talent and entrepreneurs.

Efforts focus on three broad themes:

1. Turning the best ideas into reality
2. Facilitating connections across stakeholder groups
3. Increasing access and resources so that the best and brightest, no matter their background, get the support they need

1. Turning the best ideas into reality

There is no shortage of programs and activities at the state, university, private, and regional levels to help budding entrepreneurs and inventors. In Northern Virginia alone, examples include university technology transfer and commercialization efforts such as GMU's Innovation Commercialization Assistance Program (ICAP), accelerators like INOVA Personalized Health Accelerator, CIT's Mach37 cyber accelerator, and entrepreneur support programs such as George Mason University's Mason Enterprise Centers.

University technology transfer and commercialization efforts	GEORGE MASON UNIVERSITY	**Innovation Commercialization Assistance Program (ICAP).** Commonwealth-funded and backed by Virginia's SBDC, ICAP provides counseling, mentoring, and Lean Startup-based instructional programs to entrepreneurs of typically early stage companies, preparing them for acceleration and eventual funding within the Commonwealth.
Accelerator programs	INOVA PERSONALIZED HEALTH ACCELERATOR	**INOVA Personalized Health Accelerator (PHA)** invests in companies promising the future of personalized healthcare, partnering with these companies to evolve initial stage prototypes to validated products, mature business models, and go-to-market plans for their healthcare technology solutions.
	MACH37	**Mach37** is a cyber accelerator focused on identifying and launching new cybersecurity product companies with disruptive technology.
Entrepreneur support programs	GEORGE MASON UNIVERSITY	**Mason Enterprise Center (MEC)** supports budding entrepreneurs with promising ideas to get the support, mentorship, and guidance to turn their ideas into reality. MEC is particularly focused in the areas of small business services, incubation and acceleration, government contracting, international business, entrepreneurship, technology ventures, and telework initiatives.

2. Facilitating connections across stakeholder groups

The Greater D.C. region has a robust offering of platforms, organizations, and programs focused on facilitating connections between entrepreneurs and funders. As discussed in Question A3.a, our region has a seemingly endless list of meetup groups covering an array of niche topics, including the D.C. Tech Meetup, which now ranks among the largest meetups in the world. Other examples of facilitating connections within the tech ecosystem, especially between funders and entrepreneurs, include:

Direct funding opportunities	CIT INOVA VRIF Virginia Research Investment Fund	Direct funding opportunities from programs like CIT's GAP and CRCF funds, Inova Strategic Investments (ISI), and Virginia Research Investment Fund (VRIF) provide the capital needed to support these startups through their fastest-growth stages.
Local pitch Events	ANGEL VENTURE FORUM Big Idea CONNECTpreneur mava 30 YEARS OF INNOVATION	Local pitch events, such as Angel Venture Forum, CONNECTpreneur, Cooley Capital Call, MAVA Tech Buzz, Southeast Venture Conference, and Tech Breakfast, initiate and deepen connections between those needing capital and those with capital to invest. For instance, MAVA's Tech Buzz focuses on early-stage companies and has seen nearly 3,000 companies participate in its events, selecting 350 companies to support that have gone on to raise nearly $750M in seed financing.
Connecting entrepreneurs to strategic partners	Tandem NSI	Organizations like TandemNSI connect emerging technology entrepreneurs with Federal Government agencies and potential funders with events throughout the year. TandemNSI has more than 5,000 members and has helped a broad range of national security agencies and program managers meet and engage with commercial technology companies across topics like blockchain, cybersecurity, and artificial intelligence.

3. Increasing access to underrepresented groups

Our diversity has led to the creation of countless businesses that, in turn, have created over tens of thousands of jobs. The impact of ensuring the best and most promising ideas receive the support needed to change the world cannot be understated; by the same hand, more work needs to be done on this front.

The Greater D.C. region is focused intently on identifying and supporting the next generation of entrepreneurs in schools, universities, and communities across the region. Organizations such as Tie D.C. (part of TiE Global) welcome and supports entrepreneurs from all over world in growing their ideas and businesses in the D.C. region. Other, longer-term efforts are underway in D.C. and other NOVA localities to identify budding entrepreneurs and connect them to the appropriate resources and mentorship networks for support

In NOVA, we recognize and embrace the value of partnerships.

Whether it be partnerships between public and private sector, entrepreneurs and businesses, or our educational institutions and employers, NOVA benefits tremendously from the collaborative efforts from all of its stakeholders. These educational partnerships benefit everyone, educators and employers, young and old, workforce-bound and college-bound alike. We realize and respect different educational paths that students choose to take, so we embed our partnerships with employers in every form of education—from traditional K-12 to vocational learning to higher education institutions.

On the K-12 level, we see companies big and small willing to give time and resources to supporting our students.

We have councils and programs built specifically to encourage partnerships of this kind:

Alexandria's Office of School, Business and Community Partnerships	Responsible for building broad-based, innovative partnerships with Alexandria's major employers and community organizations
Arlington's Department of School and Community Relations	Engages civic, non-profit, government, and business organizations to develop unique partnerships to support school activities, meet resourcing needs, and develop unique student career exploration experiences through programs like Arlington Tech – a project-based high school
Fairfax County's Business and Community Partnerships	Recruits and supports employer partners through the Ignite Partnerships and serves as a liaison to local Chambers of Commerce and other community organizations. The Ignite Partnership is focused on eight core areas: mentoring, tutoring, needs-based donations, workforce development, arts, STEAM, Get2Green (environmental), and financial gifts
Loudoun's School-Business Partnership Council	Steered by an Executive Council of business community leaders and education authorities, this group establishes creative partnerships between Loudoun County Public Schools and local businesses towards student professional development, curriculum applicability and community service

Our K-12 partnerships between employers and educational institutions fall into three major categories:

1. Interactive engagement inside and outside of school (e.g., after-school STEM programs or innovation competitions)
2. Mentorship and student support (e.g., speakers, mentors, tutors from our business community)
3. Teacher support (e.g., co-creating curriculums)

Given the abundance of partnerships between employers and educational institutions that exist in NOVA, we have chosen to share select examples focused on STEM and innovation:

1. Interactive engagement inside and outside of school (e.g., after-school STEM programs or innovation competitions)

Programs inside and outside of the classroom offer unique opportunities to inspire our students through hands-on learning experiences. Some examples include the following:

CapitalOne	**Capital One Coders Middle School Initiative:** A partnership between Capital One and targeted Fairfax County schools, where 20 students attend an introductory software development course after school and receive a free laptop for their personal use upon completion of the program
VIRGINIA CHAMBER	**Virginia Innovation Challenge:** A program through the Virginia Chamber of Commerce, which matches employers and educational institutions in a 12-week competition culminating in a "Shark Tank" style presentation from students to the employers
uspto	**Family Science Night:** An interactive event for families through a partnership with the FACE Center, Institute for Defense Analyses, Children's Science Center, and the U.S. Patent and Trademark Office—each Family Science Night offers 12 hands-on science activities for up to 350 families.

2. Mentorship and student support (e.g., speakers, mentors, tutors from our business community)

Programs offering direct interaction with employees through speaker series are inspiring and educational for our students; and mentorship/ tutoring programs where students can build one-on-on relationships with employees in key fields are even more impactful. We work towards engaging employers to participate in this way to enrich our students' experience. Examples of successful at-scale programs include:

Society of Hispanic Professional Engineers	**Society of Hispanic Professional Engineers (SHPE) Club:** Facilitated by members of the U.S. Patent and Trademark Office to encourage interest among Hispanic TCW students in STEM careers
INOVA	**Edge Academy:** A tutoring program between Inova Loudoun Hospital and Loudoun County Public Schools for students interested in robotics, specifically in the area of surgical applications

3. Teacher support (e.g., co-creating curriculums)

A critical piece of employer engagement with our educational institutions is support for our teachers and professors. We find that supporting our teachers enriches their experience and consequently provides high returns for our students. Examples of support for teachers from our business community include:

Microsoft Philanthropies	**Technology Education and Literacy in School (TEALS):** Loudoun County Public Schools is the largest and most active school system participant of TEALS supported by Microsoft Philanthropies. TEALS pairs computer science professionals with classroom teachers to team-teach computer science courses, ensuring real-world applicability of practices.
common sense	**Digital citizen curriculum:** Provides teachers at Alexandria City Public Schools with the curricula and resources to teach students the rights, role, and responsibilities of being a digital citizen.
GEORGE MASON UNIVERSITY	**George Mason's Virginia Initiative for Science Teaching and Achievement (VISTA):** Engages partners such as Northrup Grumman, Google, and IBM to provide intensive science teacher professional development across 47 school districts and six universities, with dramatic increases in test scores and numbers of high achieving students
CEED	**Virginia Tech's Center for Enhancement of Engineering Diversity (CEED):** Supports K-12 teacher professional development and training in conjunction with a wide range of STEM summer programs, including the weeklong engineering design projects for Imagination camps and the JROTC STEM Leadership Academy

Our higher education institutions have long-standing traditions of partnering with employers across a range of activities, from recruiting to curriculum development and advisement to ensure our students graduate with the relevant skills and valued experiences necessary to make a difference on day one of the job.

Major categories of partnership include the following:

1. Curriculum input, design, and engagement (including capstone courses)
2. Sponsored research directly with universities and via consortiums
3. Advisory boards and strategic partnerships
4. Work-based learning (e.g., internships)

1. Curriculum input, design, and engagement (including capstone courses)

Our higher education institutions believe deep industry partnerships are critical to ensuring our curricula stay relevant and prepare our students to meet employers' exact needs. Employer partners weigh in on curricula, generate projects for students to complete in capstone courses, and provide direct feedback to instructors and administrators to improve outcomes. Examples include the following:

Involvement in curricula

- NOVA, Columbus State, and AWS are partnering to develop a cutting-edge cloud computing curriculum.

- Partnership developed the nation's first Bachelor of Science in cyber security engineering program to meet the needs of the industry.

- General Motors expressed a need for expanded curriculum in cyber-physical system security, which is critical in their efforts to ensure that automobiles are safe and secure. The Hume Center partnered with the Electrical and Computer Engineering Department to develop and deploy a new graduate-level course in this area, and began offering it in Spring 2017.

- Partnership provided curriculum materials in a network security class designed to give students hands-on training in combating digital threats, which are often difficult and expensive to replicate in classroom environments.

Involvement in capstone courses

GEORGE MASON UNIVERSITY

Machine learning: Designed a system that includes applications o intelligence that can replace or reduce the level of human interactic to support a cyber-platform or perform a security function

Mobile user interface UI/UX application: Generated a mobile user interface UI/UX application by redesigning NetComm's Beacon data analytics software

VIRGINIA TECH

Ware Lab: Virginia Tech offers a wide range of 'hands on, minds on' senior design and capstone courses, many of include students from engineering, business, and the liberal arts. The projects, often in the form of competitions, provide students with a challenge that involves the design, planning and manufacturing tasks found when introducing a new product to the consumer market. Projects include hybrid electric vehicles, hyperloop, and SAE formula teams.

The Capstone Realization of Engineering and Technology (CREATE): Enables significant industry participation in the capstone design course sequence, which is teed up through an online submission system. Sponsors include UPS, Volvo, Boeing, Harris, General Motors, Canon, and many others.

UNIVERSITY of VIRGINIA

Detecting and minimizing network intrusions: Investigated unsupervised techniques for anomaly-based network intrusion detection

Think Like a Fraudster to Prevent Credit Card Fraud: Used a game theoretical adversarial learning approach in order to model the fraudster's best strategy and pre-emptively adapt the fraud detection system to better classify these future fraudulent transactions

2. Sponsored research directly with universities and via consortiums

Our higher education institutions partner with industry on a wide range of research projects both directly and indirectly through consortia.

Direct sponsorship of research

aws

nARPA

Cybersecurity for cloud networks: Project is in second 18-month period to design a means to respond against distributed-denial-of-service (DDOS) attacks.

GEORGE MASON UNIVERSITY

Adobe

Applying machine-learning algorithms to visual technology: Researchers are developing a new photo-editing technique that allows people to modify their pictures to reflect different materials.

Improve video streaming on mobile phones: Researchers explored ways to utilize the new features offered by HTTP/2 for video streaming to mobile devices to make media playback on phones smoother while consuming less power.

Google

Google is collaborating with the Virginia Tech Transportation Institute to examine national crash data and data from naturalistic driving studies to better estimate existing crash rates, and then compare these results to data from Google's Self-Driving Car program. Collaborative university-industry research programs such as this are helping self-driving cars move quickly from prototype to everyday reality.

VT
VIRGINIA TECH

The Washington Post The Discovery Analytics Center at Virginia Tech worked with the data science team at the Washington Post to develop predictive analytics methods for inferring the performance of news articles soon after publication. This system is now deployed in production use and ongoing research is supporting the design of methods for article placement, updating, and promotion strategies.

University of Virginia

Snap Inc.	Collaborated with Snap Research group in interactive lens recommendation, in which we design online learning algorithms to perform personalized lens recommendations
Walmart.com	Collaborated with the Search team in Walmart Lab in mining shoppers' browsing log for personalized item recommendation

Consortia

CCAM
COMMONWEALTH CENTER FOR ADVANCED MANUFACTURING

Rolls-Royce
VIRGINIA TECH
University of Virginia

In 2007, Rolls-Royce N.A. established a Higher Education Partnership with the Commonwealth, including CCAM, as part of their economic incentive package to build new factories in Virginia.

Core investments included faculty, research funds, workforce development (e.g., apprenticeship programs), and K-12 STEM programs.

CCALS

University of Virginia
VSU
VCU
OLD DOMINION UNIVERSITY

Commonwealth Center for Advanced Logistics Systems: Applied research center that bridges the gap between fundamental research that is typically performed at universities, and product development that is routinely performed by companies. Its goal is to accelerate the transition of technologies from fundamental developments through proof of concept and on to commercialization.

CPES

Center for Power Elctronic Systems

3M
VERTIV
ABB

(75+ other industry partners)

The **Center for Power Electronic Systems** was established as an NSF Engineering Research Center to facilitate hand-in-hand collaboration with industry affiliates to radically transform electronic systems-level technologies that are used to power everything from microprocessors to electric vehicles to cities. With more than 80 industry partners, the Center has become a global destination for top researchers, led to innovations that are in virtually every mobile device, and been awarded over $250M in external research support.

3. Advisory boards and strategic partnerships

Many of our institutions have established broad-based relationships with key employer partners who weigh in on curriculum, develop strong recruiting relationships with the departments, and sponsor ongoing research, among many other activities. Examples include:

GEORGE MASON UNIVERSITY	Volgenau School of Engineering Advisory Board	Creates synergy between the school and the professional community by addressing workforce development demands, industry expectations, and employment trends
UNIVERSITY of VIRGINIA	The Computer Science Department's Industry Advisory Board	Includes local and regional companies that hire many of our undergraduates. At an annual meeting, faculty members give presentations on what we teach in core and elective classes that matter to them. We also present possible curriculum revisions and seek their input
VIRGINIA TECH	College of Engineering Advisory Board and Committee of 100	The College of Engineering as well as each department have advisory boards comprised of executives in industry and government that participate in annual evaluations of the instructional and research programs, and provide feedback and specific recommendations that reflect future trends and demands in the field. After serving in a leadership capacity, advisors are asked to join the Committee of 100.

Examples of strategic partnerships

VIRGINIA TECH	**LOCKHEED MARTIN**	Cultivates brand and relationship with students and faculty by hosting recruiting events and experiences, sponsoring research projects via a master agreement, contributing significant employee time to writing, and engaging with the capstone course

4. Work-based learning

We strongly believe in the value of experiential learning, and thus have recently changed our secondary education diploma requirements to mandate work-based learning as part of any child's curriculum. In our higher education institutions, work-based learning in partnership with employers has always been a core part of our expectations and curriculum for our students. Example programs in higher education include:

- **Internship programs:** Our institutions partner with world-class companies across all sectors to offer quality internships to our students. From internships at leading tech firms like Google, Facebook, and, of course, Amazon and Amazon Web Services to locally-headquartered firms like Telos, Leidos, and Booz, Allen Hamilton, our institutions view internships as critical to students' learning experience and career preparation.

- **Apprenticeship programs:** Many apprenticeship programs exist in NOVA schools, including the Amazon Web Services and Northern Virginia Community College apprenticeship program in which veterans enroll in courses and develop soft skills.

- **Residency programs:** Partnerships like the one between Howard University and Google provide a three-month summer Computer Science residency for students in the Computer Science program, producing hundreds of industry-ready black computer science graduates and future leaders; Howard West recently announced plans to expand to a yearlong program.

A4.b. Future Proposals - Describe the big ideas your community proposes in addition to current efforts mentioned above to enhance your community's development of educational partnerships. Examples might include: a post-secondary institution partnering with the Project to establish a school or campus to support the education of tech talent; or the establishment of a K-12 magnet school on the HQ2 campus focused on STEM education.

We have big ideas to support the continued and growing impact of relationships between our employers and educational institutions.

We are committed to supporting these efforts in STEM and innovation, in particular, as seen in the following initiatives:

Public and private sector innovation go hand-in-hand in Virginia.

As our region strengthens economically and the presence of certain sectors increases, directing our best and brightest toward these exciting fields serves both parties extremely well. To that end, we hope to co-create a range of programs, from an IT campus to new university programs to sponsored internships at a pre-K-to-12 level, in addition to the two initiatives mentioned above. Targeted

programs will ensure our students are at the forefront of innovation and learning, staying ahead of the curve on the most important and employable skill sets. All of these efforts would, of course, greatly benefit our region's employers who will have premier access to this talent pool.

Talent | Big Questions and Big Ideas | Educational Partnerships
A4.c. Roadblocks - Describe the greatest barriers your community has faced in the deployment of STEM programs or road blocks to getting them off the ground. Describe how the Project could join your community in resolving these issues.

We see a range of targeted and community-wide solutions to improve participation in STEM programs.

At the K-12 level, the barriers to the successful deployment of STEM programs center on a lack of financial resources and teachers as well as engagement among traditionally underrepresented groups. The barriers at the undergraduate and graduate levels are primarily resource-driven.

We see a range of targeted and community-wide solutions to identified roadblocks, all of which would be strengthened through partnership with Amazon:

1. Roadblock: General lack of awareness of STEM careers and the educational paths that would prepare students for success in these fields
   Potential solution: Create community-based tools and programs that build widespread awareness and access to STEM fields at a young age, including speaker series for students and families, mentorship opportunities, and after-school engagement in application-based programs

2. Roadblock: General lack of awareness of STEM opportunities and a dearth of representative role models within underrepresented groups
   Potential solution: Co-create minority STEM programming that exposes and anchors minority communities around STEM skills

3. Roadblock: Resource requirements associated with the pursuit of higher education in general, and STEM disciplines in particular
   Potential solution: Develop a range of degree programs to make STEM more accessible to college students at any level

4. Roadblock: Resource requirements associated with the pursuit of higher education in general, and STEM disciplines in particular
   Potential solution: Launch innovative financing tools to improve access to STEM fields from pre-K-to-12th grade all the way through graduate levels

Innovation Lives Here

84
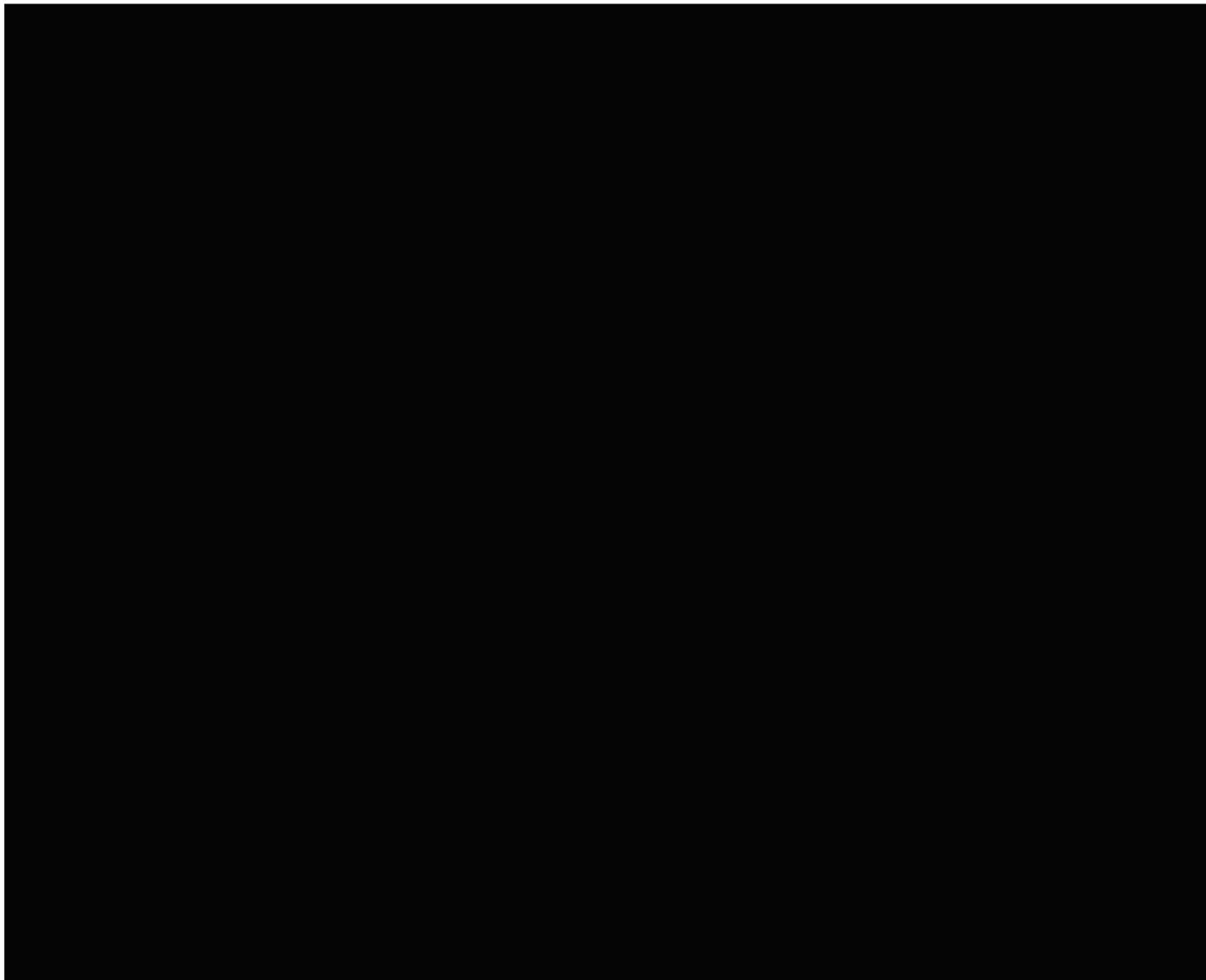
2. Co-create minority STEM programming that exposes and anchors minority communities around STEM skills

Target outcome
Boost the minority tech talent pipeline of the future by developing minority K-12 STEM education programming that encourages interest and exploration of STEM fields.

How it will work
We would seek investment and support for focused STEM programming for minority students while creating support systems like clubs and interest groups specified for minority students. Following the example of the successful Society of Hispanic Professional Engineers Club in Alexandria, we would engage minority and supporting employees from the business community to come in and speak to these students about their path to employment and how students can achieve their goals too.

Imagine partnering with our school districts to develop innovative mentorship and tutoring programs that match students with Amazonians. With Amazon's scale, ingenuity, and shared philosophy of trying to improve the world around us, we could ensure every child from an underrepresented group is paired with a mentor to inspire them to enter STEM fields. The opportunities are limitless.

3. Developing a range of degree programs to make STEM more accessible to college students at any level

Target outcome

Increase the number of graduates in computer science, systems engineering, machine learning, UX/UI and related disciplines who can be hired into technical roles through increasing types of degree and certification programs.

How it will work

In order to make STEM fields more accessible to a wider range of people, we are interested in developing degree programs and departments at Virginia's leading four-year universities such as the University of Virginia, Virginia Commonwealth University, and Virginia Tech. Simultaneously, tailoring programs towards technical schools and community colleges will further increase the tech talent, and offer opportunities to students who might not have otherwise been interested in STEM or seen these fields as likely career paths. Online programs tailored toward particular STEM/computer skills have shown great promise in training excellent programmers. Furthermore, we are interested in developing an online talent management platform that would channel STEM talent towards internships and freelance work, codifying their skills and experience.

4. Innovative financing tools to improve access to STEM fields from pre-K to 12 to graduate levels

Target outcome

Increase number of students in Virginia's public schools and colleges who are pursuing STEM career paths by removing financial barriers through a combination of state, local and private sector funding.

How it will work

In addition to building a range of program options for graduate levels, developing innovative financing is essential to improving access and diversity in STEM fields. Currently, due to prohibitive costs, 60% of Virginia's STEM programs require a participation fee. We hope to partner with Amazon and the business community to find solutions to make existing programs free and increase enrollment. In addition, existing programs could be redesigned and new programs offered in partnership with Amazon that could have no cost to participants.

A5. Describe any places where you feel that the raw data does not tell the full story for your community. Tell us the full story. For example, if your software developer location quotient is low enough to suggest that a tech employer might struggle to recruit but it is rapidly increasing and employers are having great success recruiting to your community right now, tell us that. Perhaps your housing supply is low but your community has implemented innovative programs to address this in the future.

No other city can come close to the scale, depth, and connectivity of Greater D.C.'s public-private sector tech ecosystem.

The Greater D.C. region offers an unparalleled talent base that meets the needs of companies benefiting from the distinct geographical advantage at the nexus of public and private sector innovation.

Greater D.C.'s highest concentration of tech talent powers companies of all shapes, sizes, and types.

The region continues to educate and attract people who seek not just employment but fulfillment through opportunities to make a difference in the world. Whether in fields like cybersecurity protecting the company's physical and virtual infrastructure, innovative research labs like the National Institutes of Health developing the next cure to a worldwide disease, and even operational roles developing and managing systems that deliver vital government services to Americans, the D.C. region offers a wealth and broad spectrum of tech opportunities for people with all backgrounds.

Furthermore, the educational system provides the platform for people to enter tech fields at every stage in life and from every type of educational institution:

- First-time workers graduating from nationally-competitive STEM programs from regional institutions like Northern Virginia Community College and George Mason University and statewide universities like Virginia Tech and University of Virginia

- Mid-career changers accessing the numerous quality online programs offered by local and national providers

- Those in mid-to-late stages of their career looking to enhance their skills through programs and courses offered through innovative organizations like The Institute for Statistics Education

Government is a central player in the D.C. tech ecosystem - as a customer, investor, and regulator.

As a customer, the federal government's expected $90B in IT spending cannot be matched by any business. The demands the federal government has for innovative and cutting edge technologies as diverse as cybersecurity, healthcare, and telecommunications support an innovation ecosystem that attracts entrepreneurs and offers small, high-growth companies opportunities to scale. Everywhere you go, public policy leaders, tech workers, entrepreneurs, and researchers interact on a daily basis to turn the next generation of ideas into realities.

As an investor, the federal government helps shape, support, and grow the next generation of tech companies by channeling tens of billions of dollars to federal labs and cutting-edge technologies (e.g., federally funded research and development centers); making direct investments in companies (e.g., in-Q-tel); and contracting with large and small companies to deliver next generation technologies.

Last, as a regulator, firms and entrepreneurs benefit directly by being in the flow of information and conversations within the decision-making rooms. Even firms that do not work directly with the government benefit from key insights into market regulation and upcoming regulatory changes that shape the playing field in almost every industry.

The D.C. MSA is currently producing more tech graduates than the region has jobs to offer.

In the short term, this creates an immediate opportunity for Amazon to attract and absorb the region's top talent that may otherwise be looking to other metros. Furthermore, unlike other regions facing rapid wage growth for tech roles, this extra supply will allow the region to absorb Amazon's needs with only moderate impact on tech talent wages.

To address Amazon's medium-term talent needs, the region features some of the best school systems in the country, producing many the future tech workers that could will top engineering jobs at Amazon in five to ten years. Schools such as Thomas Jefferson High School for Science and Technology, the No. 1 STEM public, non-charter high school in America, send students to top computer science programs in the region, state, and country who would jump at the opportunity to return home to work at Amazon.

In the long-term, the state will make significant investments in higher education to ensure the region remains the top producer of tech talent by adding 25,000 new graduates each year in key tech fields like computer science and systems engineering over the next 20 years. This expansion will not only deepen the talent pool, but expand the type and quantity of talent that Amazon desires.

The Northern Virginia talent pool, both public and private, provides an exceptional value for every innovative company located here.

Leading companies—and the government—need tech talent across the education, skill, and experience spectrums. Our region has just this breadth and diversity of talent, which will only get stronger as the Commonwealth continues to invest significantly in its residents' potential.

Talent | Education

B1. Describe the educational system (from pre-K to 12 and graduate level) in high-level terms. Focus on their integration and cooperation as well as responsiveness to employer needs. If those areas are lacking, describe how your community proposes to address those deficiencies. Provide a map of each school within a 5-mile radius of each proposed real estate site.

No matter where your employees choose to live, you can be confident that their children will receive one of the best primary and secondary school educations in the country.

NOVA's great education starts in pre-kindergarten and continues all the way through high school, where there are 14 nationally ranked high schools—including the No. 1-ranked public, non-charter STEM high school in the country, Thomas Jefferson High School for Science and Technology. At each stage of development, NOVA's students receive a world-class education in the classroom, a seemingly endless array of STEM-enrichment opportunities outside of the classroom, and a full slate of activities offered by organizations in the surrounding community.

For those continuing their studies after high school, they have the opportunity to matriculate through the top-ranked university system in the country, according to a recent *SmartAsset* report, where they will learn not only how to be leaders in their fields but also how to make a difference in this world.

In primary school, NOVA students outperform most of NOVA's HQ2 competitor cities at each stage of development.

NOVA's students outperform their peers in math and reading in the third, sixth, and eighth grades, and the average student often performs at the next grade level. Montgomery County and Raleigh are the only other school systems that can boast similar performances.

Northern Virginia's commitment to academic excellence is pervasive and the result of significant public investment, with each county contributing more than 60% of the school district's local budget. This commitment and—more importantly—investment in the primary and secondary school system have generated outsized results.

Grade levels above/below national average, 2013

	3rd grade	6th grade	8th grade
NOVA	1.4	1.3	1.1
Raleigh, NC	1.4	1.1	0.8
Pittsburgh, PA	0.9	0.7	0.7
Montgomery County, MD	0.7	1.2	1.3
Miami, FL	0.7	0.1	-0.3
Austin, TX	0.4	0.3	0.1
Newark, NJ	0.4	0.3	0.1
New York, NY	0.4	-0.2	-0.5
Atlanta, GA	0.3	-0.1	-0.2
Columbus, OH	0.2	0.2	0.1
Indianapolis, IN	0.1	-0.1	-0.5
Boston, MA	-0.1	0.0	-0.1
Denver, CO	-0.1	-0.4	-0.8
Chicago, IL	-0.3	-0.1	-0.1
Nashville, TN	-0.3	-0.7	-1.2
Dallas, TX	-0.4	-0.4	-0.6
Los Angeles, CA	-0.5	-0.8	-0.7
Washington, D.C.	-0.8	-1.3	-1.6
Philadelphia, PA	-1.3	-1.3	-1.2

Note: 8th grade performance measures for some metros only available for reading. Only used home county for cities (i.e., excluded metro school systems). New York City – only New York County figures used
Source: Sean F. Reardon, Andrew D. Ho, Benjamin R. Shear, Erin M. Fahle, Demetra Kalogrides, & Richard DiSalvo. (2017). Stanford Education Data Archive (Version 2.0). http://purl.stanford.edu/db586ns4974

Strong academic performance continues through high school, where the opportunities for exploration—particularly in STEM fields—expand seemingly exponentially.

NOVA's high school excellence is built upon each district's ability to provide a rigorous curriculum to all students. Based on the most recent data available (SY2013), NOVA has a higher share of students enrolled in advanced coursework in high school than any of its peers with exception of Montgomery County.

We're proud of the fact that not only are we providing our students with strong foundations in math and reading, but they are taking the initiative to challenge themselves as well.

Students taking AP/IB courses, 2013
%

Montgomery County, MD	49
NOVA	45
Chicago, IL	35
Pittsburgh, PA	29
Dallas, TX	26
Miami, FL	26
Raleigh, NC	25
Washington, DC	24
Austin, TX	24
Denver, CO	23
Los Angeles, CA	22
Nashville, TN	21
Philadelphia, PA	19
Boston, MA	17
Atlanta, GA	16
New York, NY	14
Columbus, OH	10
Newark, NJ	No data available
Indianapolis, IN	No data available

Source U S Department of Education, Civil Rights Division, https //ocrdata ed gov/DataAnalysisTools/DataSetBuilder?Report=7
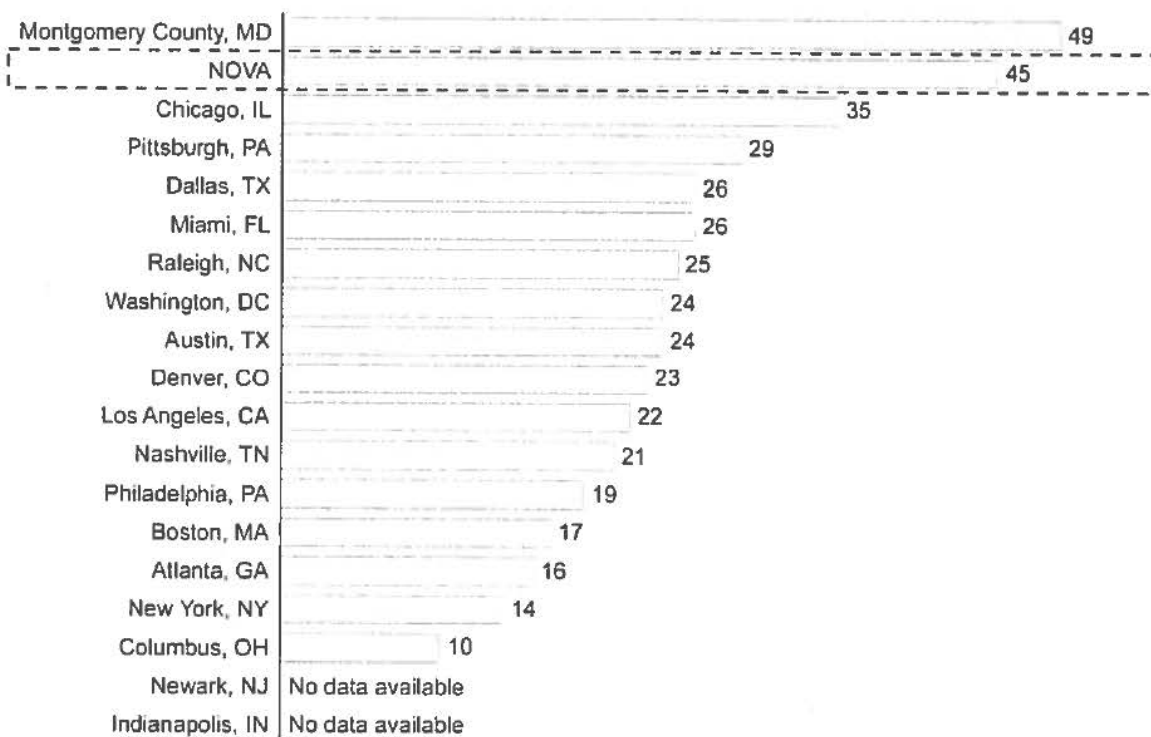
The strong foundation that students receive in primary school and throughout high school leads to some of the nation's highest graduation rates—many over 90%—well above NOVA's HQ2 competitor cities.

Our graduation rates are the highest among our Top 20 cities with available data (SY2013 was the latest year available with consistent and reliable data). Many of our graduates proceed directly to the workforce, but most attend some form of post-secondary education, with many students entering some of the top colleges and universities in the world.

Standardized high school graduation rates, 2013
%

NOVA	92
Montgomery County, MD	88
Columbus, OH	84
Dallas, TX	82
Raleigh, NC	81
Indianapolis, IN	77
Denver, CO	71
Chicago, IL	70
Newark, NJ	68
Los Angeles, CA	68
Miami, FL	68
Atlanta, GA	67
Boston, MA	66
Austin, TX	No data available
Nashville, TN	No data available
New York, NY	No data available
Philadelphia, PA	No data available
Pittsburgh, PA	No data available
Washington, DC	No data available

Source Hechingerreport.org <http://hechingerreport org/the-gradation-rates-from-every-school-district-in-one-map/>

Opportunities for children to learn about STEM fields—and as they get older, STEM careers—extend well beyond the classroom, and students are actively encouraged through afterschool and enrichment activities.

Beginning in elementary school, each school system offers a wealth of enrichment opportunities that expose young students to the STEM world.
Our region is committed to cultivating the next generation of computer scientists, engineers, and healthcare professionals, and intentional STEM approaches start early. For instance, Arlington's preschool teachers, regardless of their school location, receive specialized training on providing opportunities to explore STEM through play and other classroom activities. Alexandria's K-5 Cora Kelly School for Math, Science and Technology provides an exciting and engaging STEM educational curriculum, which includes "The Habitat", an outdoor classroom that allows students to engage and learn directly from nature. Opportunities beyond the classroom include the regional nonprofit, Children's Science Center in Fairfax County, a center dedicated to instilling a love of learning STEM in all children.

"The SySTEMic Solutions summer camps improve the number of STEM educated individuals in our local community. As the CEO of a tech company, I need our future employee pool to have a specific skill set, which happens to include the STEM disciplines. Engaging kids in math and science may improve the quality of our future employee pool, but the issue runs much deeper than finding talented software or security engineers for Telos. Puting my company, and even Loudoun County aside for a moment, STEM is critical to our nation as a whole. Cyber is a warfighting domain. Cyber-warriors are in high demand in our country, and without highly skilled software engineers and security professionals with strong backgrounds in math and science, our national security is at risk."

- John Wood, CEO of Loudoun's Telos Corporation
works with NVCC in their STEM initiatives

The region also benefits tremendously from the outreach efforts of a broad array of organizations, especially those of Northern Virginia Community College, with campuses located across Northern Virginia. The SySTEMic program is the college's STEM outreach program, inspiring students in elementary school to continue to pursue STEM education in high school, college, and the workforce through a collaboration with schools, businesses, and community organizations. Programs include activities such as summer STEM camps, career exploration, competitive robotics, and STEM dual enrollment delivered to participating students and teachers.

Northern Virginia Tech Talent Pipeline
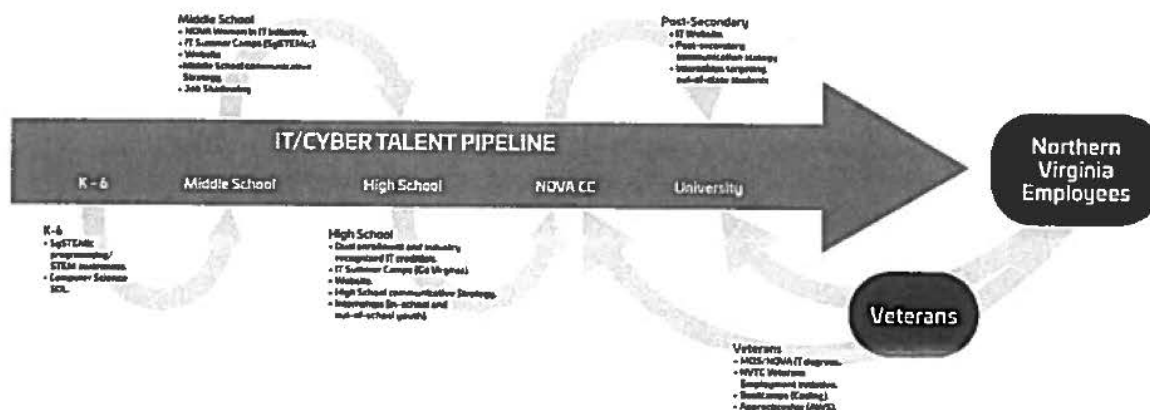
B3.e. (note: question has been pulled up in the narrative) Primary and secondary school rankings at the state/national level as well as a "scatter map."

NOVA boasts several top-ranked schools.

K-12 Education in Northern Virginia
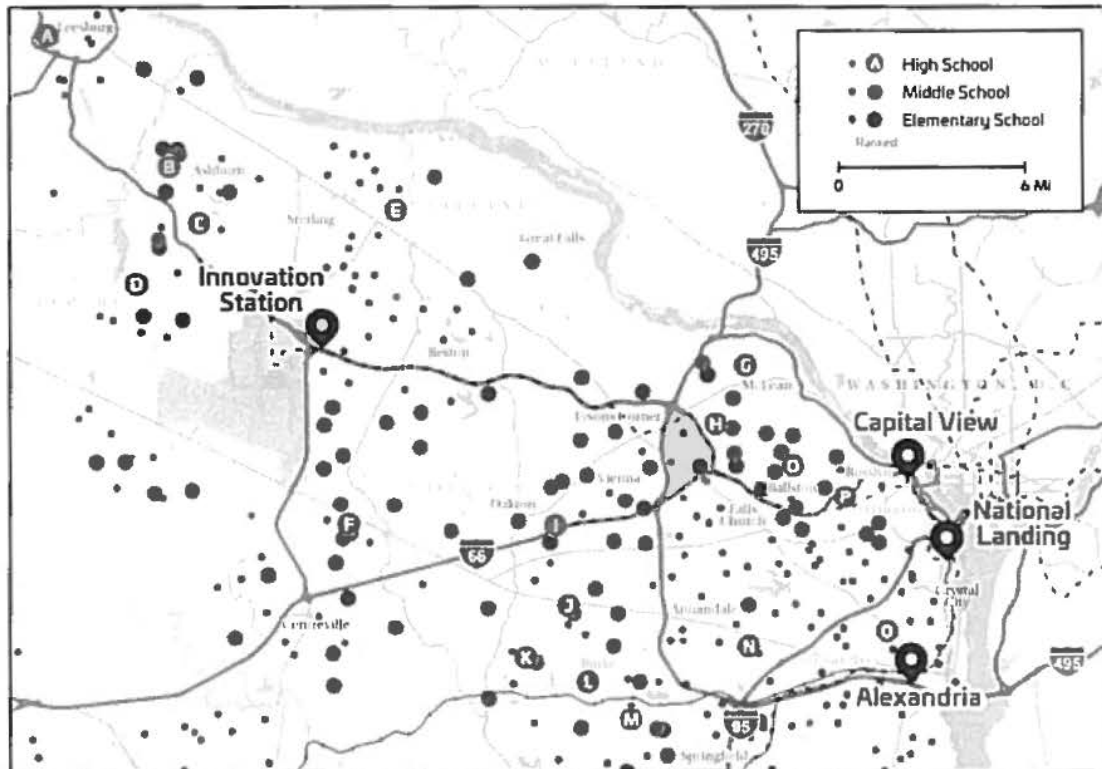
	Top Ranked High Schools	School System	Virginia Ranking	U.S. News Rankings			Niche.com Rankings	
				Nat'l Rank Percentile	Graduation Rate	STEM Ranking	Nat'l Rank Percentile	School Grade
A	Loudoun County High	Loudoun	21	96	96%	-	95	A+
B	Stone Bridge High	Loudoun	7	98	98%	85	97	A+
C	Broad Run High	Loudoun	20	96	98%	-	94	A
D	Briar Woods High	Loudoun	9	98	98%	-	95	A+
E	Dominion High	Loudoun	10	98	95%	-	96	A+
F	Chantilly High	Fairfax	14	97	97%	171	97	A+
G	Langley High	Fairfax	3	99	98%	223	98	A+
H	McLean High	Fairfax	2	99	98%	-	98	A+
I	Oakton High	Fairfax	4	99	97%	-	97	A+
J	Woodson High	Fairfax	5	99	98%	211	97	A+
K	Robinson Secondary	Fairfax	30	95	98%	-	95	A+
L	Lake Braddock Secondary	Fairfax	12	97	97%	-	94	A
M	West Springfield High	Fairfax	8	98	98%	-	95	A+
N	Thomas Jefferson High School for Science & Technology	Fairfax	1	99	99%	2	99	A+
O	Yorktown High	Arlington	6	98	98%	-	96	A+
P	Washington-Lee High	Arlington	13	97	97%	-	93	A+
Q	T.C. Williams High	Alexandria	-	-	80%	-	-	B+

Top Ranked Middle Schools

Middle School Name	School System	Niche Rank Percentile	Niche Grade
Carson Middle	Fairfax	99	A+
Frost Middle	Fairfax	99	A+
Swanson Middle	Arlington	99	A+
Kilmer Middle	Fairfax	99	A+
Franklin Middle	Fairfax	99	A+
Rocky Run Middle	Fairfax	99	A+
Cooper Middle	Fairfax	99	A+
J. Michael Lunsford Middle	Loudoun	99	A+
Thoreau Middle	Fairfax	99	A+
Liberty Middle	Fairfax	99	A+
Williamsburg Middle	Arlington	99	A+
Longfellow Middle	Fairfax	99	A+
Belmont Ridge Middle	Loudoun	99	A+
Farmwell Station Middle	Loudoun	98	A+
Irving Middle	Fairfax	98	A+
Stone Middle	Fairfax	97	A+
Eagle Ridge Middle	Loudoun	97	A+
South Middle	Fairfax	97	A+
Harper Park Middle	Loudoun	97	A+
Jefferson Middle	Arlington	96	A
Jackson Middle	Fairfax	96	A
Trailside Middle	Loudoun	96	A

Note: Listed school are in the top 10% of all Middle Schools ranked by Niche.com

Top Ranked Elementary Schools

Elementary School Name	School System	Niche Rank Percentile	Niche grade		Elementary School Name	School System	Niche Rank Percentile	Niche grade
Haycock Elementary	Fairfax	99	A+		Wolftrap Elementary	Fairfax	98	A+
Westbriar Elementary	Fairfax	99	A+		Franklin Sherman Elementary	Fairfax	98	A+
Mosby Woods Elementary	Fairfax	99	A+		Fairhill Elementary	Fairfax	98	A+
Willow Springs Elementary	Fairfax	99	A+		West Springfield Elementary	Fairfax	98	A+
Spring Hill Elementary	Fairfax	99	A+		Vienna Elementary	Fairfax	98	A+
Mantua Elementary	Fairfax	99	A+		Taylor Elementary	Arlington	97	A+
Canterbury Woods Elementary	Fairfax	99	A+		Stenwood Elementary	Fairfax	97	A+
Forestville Elementary	Fairfax	99	A+		Hunters Woods Elementary for the Arts & Sciences	Fairfax	97	A
Churchill Road Elementary	Fairfax	99	A+		Laurel Ridge Elementary	Fairfax	97	A
McKinley Elementary	Arlington	99	A+		Powell Elementary	Fairfax	97	A
Arlington Traditional	Arlington	99	A+		Kings Glen Elementary	Fairfax	97	A
Chesterbrook Elementary	Fairfax	99	A+		Flint Hill Elementary	Fairfax	97	A
Keene Mill Elementary	Fairfax	99	A+		Union Mill Elementary	Fairfax	97	A
Floris Elementary	Fairfax	99	A+		Crossfield Elementary	Fairfax	97	A
Kent Gardens Elementary	Fairfax	99	A+		Mill Run Elementary	Loudoun	96	A
Springfield Estates Elementary	Fairfax	99	A+		Rosa Lee Carter Elementary	Loudoun	96	A
Nottingham Elementary	Arlington	98	A+		Waynewood Elementary	Fairfax	96	A
Lees Corner Elementary	Fairfax	98	A+		Belmont Station Elementary	Loudoun	96	A
Arlington Science Focus	Arlington	98	A+		Long Branch Elementary	Arlington	96	A
Patrick Henry Elementary	Arlington	98	A+		White Oaks Elementary	Fairfax	96	A
Greenbriar West Elementary	Fairfax	98	A+		Round Hill Elementary	Loudoun	96	A
Sunrise Valley Elementary	Fairfax	98	A+		Pinebrook Elementary	Loudoun	96	A
Oak Hill Elementary	Fairfax	98	A+		Hunt Valley Elementary	Fairfax	96	A
Ashlawn Elementary	Arlington	98	A+		Emerick Elementary	Loudoun	96	A
Navy Elementary	Fairfax	98	A+		Sanders Corner Elementary	Loudoun	96	A
Glebe Elementary	Arlington	98	A+		Little River Elementary	Loudoun	95	A
Wakefield Forest Elementary	Fairfax	98	A+		Liberty Elementary	Loudoun	95	A
Colvin Run Elementary	Fairfax	98	A+		Belvedere Elementary	Fairfax	95	A
Jamestown Elementary	Arlington	98	A+		Legacy Elementary	Loudoun	95	A
Waples Mill Elementary	Fairfax	98	A+		Silverbrook Elementary	Fairfax	95	A
Great Falls Elementary	Fairfax	98	A+		Lowes Island Elementary	Loudoun	95	A
Louise Archer Elementary	Fairfax	98	A+		Bull Run Elementary	Fairfax	95	A
Lemon Road Elementary	Fairfax	98	A+		Fox Mill Elementary	Fairfax	95	A
Oakton Elementary	Fairfax	98	A+		Fairview Elementary	Fairfax	95	A
Sangster Elementary	Fairfax	98	A+		Fairfax Villa Elementary	Fairfax	95	A
Tuckahoe Elementary	Arlington	98	A+					
Poplar Tree Elementary	Fairfax	98	A+					

Note: Listed schools are in the top 10% of all Middle Schools ranked by Niche.com

Alexandria City Public Schools

K-12 Education within 5 Miles of Alexandria
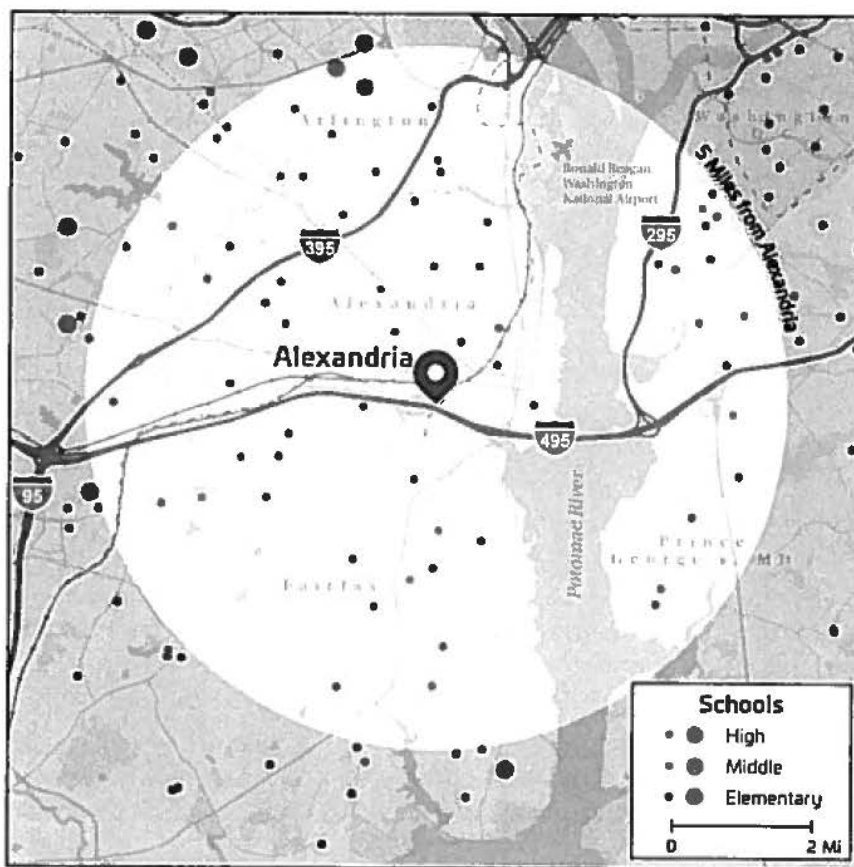
In Virginia

Arlington County Schools
Oakridge Elementary
Claremont Elementary
Abingdon Elementary
Barcroft Elementary
Randolph Elementary
Gunston Middle
Campbell Elementary
Patrick Henry Elementary*
Jefferson Middle*
Drew Model Elementary
Hoffman-Boston Elementary
Wakefield High

City of Alexandria Schools
Charles Barrett Elementary
Cora Kelly Elementary
Douglas MacArthur Elementary
Francis Hammond Middle
George Mason Elementary
George Washington Middle
James K. Polk Elementary
Jefferson-Houston Elementary
John Adams Elementary
Lyles-Crouch Elementary
Matthew Maury Elementary
Mount Vernon Elementary
Patrick Henry Elementary
Samuel W. Tucker Elementary
T.C. Williams High
William Ramsay Elementary

Fairfax County Schools
Belle View Elementary
Bren Mar Park Elementary
Bryant Alternative High
Bucknell Elementary
Bush Hill Elementary
Cameron Elementary
Clermont Elementary
Edison High
Franconia Elementary
Glasgow Middle
Glen Forest Elementary

Groveton Elementary
Hollin Meadows Elementary
Hybla Valley Elementary
Mount Eagle Elementary
Mount Vernon Woods Elementary
Parklawn Elementary
Rose Hill Elementary
Twain Middle
West Potomac High
Whitman Middle

* Top Ranked Virginia Schools

Talent | Education

The K-12 education system in Alexandria is comprised of Alexandria City Public Schools (ACPS) and almost a dozen private schools.

Combined, these institutions provide a holistic education experience starting in pre-school and continuing into adulthood. Students in Alexandria's public and private schools are exposed to state-of-the-art learning environments and academic programs with focuses on STEM, foreign languages, and college preparation (including advanced placement and dual enrollment opportunities). The city is also home to Greater Washington's only private boarding school, Episcopal High School.

This school year, ACPS will educate almost 15,500 students in a district that includes 12 elementary schools, one pre-K through eighth-grade school, two middle schools, and one high school. T.C. Williams High School consists of a ninth-grade campus and a separate main campus for grades 10-12. ACPS has a highly diverse student body that includes students from 134 different countries who speak 113 native languages and represent a multitude of ethnic, cultural, and economic groups. Diversity in race, language, and socioeconomic class is a hallmark of the system. Racially, Alexandria's students are 37% Hispanic, 28% White, 27% Black, and 5% Asian, with other races representing the remainder. Furthermore, approximately 30% of the division's student population are English-language learners and over 60% are eligible for free and reduced lunch. In short, our school system is diverse in every way possible, providing students the privilege and benefit of learning from and with people who represent the diverse community which ACPS calls home.

The division's strategic plan, ACPS 2020, aims to ensure academic success for each and every student.

This is achieved through a focus on academic excellence and equity, creating partnerships with families and the community, providing a highly trained and professional staff, and creating 21st-century learning environments.

The 10 private schools within the City offer families choice through the opportunity to attend programs that are tailored to their individual child's strengths and needs.

The seven primary schools include one NCLB Blue Ribbon School, and the three private high schools have received state-wide recognition, including best private high school (No. 38 Bishop Ireton), best college prep school (No. 3 Episcopal), and top five best K-12 (St. Stephen's & St. Agnes).

The Alexandria City Public Schools' Office of School, Business and Community Partnerships serves as a liaison and direct link to the business community.

The Office is responsible for building broad-based, innovative partnerships with Alexandria's major employers and community organizations. The goal is to provide opportunities for the private sector to advise ACPS staff on the latest trends affecting commerce, science, and technology while granting students access to resources, expertise, and valuable real-world experiences.

Examples of key partnerships between businesses and the community include:

- The **U.S. Patent & Trademark Office** provides STEM enrichment activities and facilities for after-school activities for ACPS students

- **The Alexandria Seaport Foundation** offers in-school, project-based learning in technology, algebra, and other STEM courses

- **CommonSense Media** provides teachers and students curriculum and resources to support ACPS's commitment to teaching the rights, roles, and responsibilities of being digital citizens

Talent | Education

B2. Describe early childhood education programs in your community, especially those focusing on STEM initiatives. Be specific in your description, including name and distance to proposed real estate sites.

In June 2017, ACPS adopted Creative Curriculum, a comprehensive, research-based curriculum that features exploration and discovery as a way of learning.

Students learn through hands-on, project-based investigations focusing on the child's daily life experiences. STEM is blended throughout the day as the curriculum focuses on the whole child while offering opportunities for natural exploration to make meaning of their environment. Through the exploration of different units of study, such as trees, buildings, and insects, teachers facilitate language development, social skills, problem solving, and motor skills. Visual pictures, iPads, SMART Boards, and sensory strategies are some of the different tools used to support the diverse needs of students and to extend hands-on learning opportunities.

Early childhood is the most appropriate time for students to be exposed to STEM as it is naturally embedded into every part of the young child's learning day. As such, Alexandria offers three primary channels for early childhood education:

Channel	Details
Virginia Preschool Initiative (VPI)	The VPI program funds a full-day preschool program offered to children who are four years old and meet the eligibility requirements of the program.
Early Childhood Special Education (ECSE)	The ECSE program serves students between the ages of two through four years old who are eligible for special education services through Child Find.
Preschools Learning Together (PLT)	PLT is a half-day preschool program offered to children ages two years and six months through four years. This is an opportunity for typically developing children from the Alexandria community to be integrated into an ECSE classroom for the purpose of providing typical role models to students with disabilities.

Early Childhood Programs at School Facilities	Alexandria	National Landing
John Adams Elementary School	4.8 miles	6.2 miles
Charles Barrett Elementary School	4.3 miles	2.9 miles
Patrick Henry Elementary School	3.3 miles	6.7 miles
Cora Kelly School for Math, Science and Technology	3.3 miles	1.9 miles
James K. Polk Elementary School	3.7 miles	6.5 miles
William Ramsay Elementary School	5.8 miles	6.7 miles
Jefferson-Houston School	1.6 miles	3.9 miles
Alexandria Country Day School	2.8 miles	2.9 miles
Blessed Sacrament School	2.9 miles	4.2 miles
Grace Episcopal School	3.2 miles	2.4 miles
Immanuel Lutheran School	2.1 miles	3.1 miles
Potomac Crescent Waldorf School	3.4 miles	4.3 miles
St. Mary Catholic School	2.2 miles	4.7 miles
St. Rita Catholic School	3.3 miles	2.3 miles

Talent | Education | Primary, Secondary Education
B3. Describe childhood education programs in your community focused on STEM initiatives.

Alexandria City Public Schools (ACPS) includes 12 elementary schools and one pre K-8 school.

At the primary level, no class has more than 26 students; kindergarten and grades one and two have lower caps at 22 and 24 students per class, respectively. The City of Alexandria and ACPS are intensely focused on ensuring all students receive a strong academic foundation, which is why both organizations have committed significant resources to early childhood programs from pre-K through third grade.

Specifically, the school division is actively promoting students' use of scientific reasoning processes such as inquiry, hypothesis testing, data analysis and interpretation, and synthesis.

The division is also offering a range of cross-disciplinary and integrated approaches to reinforcing students' science knowledge and skills through connections made to technology and blended learning, reading in the content areas, engineering problem solving and scenarios, and mathematics.

STEM highlights in the primary grades include:

Cora Kelly School for Math, Science, and Technology (K-5) is a diverse learning community dedicated to STEM education aimed at cultivating scientists, mathematicians, artists, and engineers beginning at a young age. At Cora Kelly, students are equipped with strategies to think critically, problem solve, utilize higher order thinking questions, and engage in cooperative learning and inquiry-based lessons. Students are immersed in science, technology, engineering, and mathematics content and skills every day while learning from instructors trained to employ a wide variety of instructional techniques across unique settings.

Ferdinand T. Day Elementary School

The recently-named Ferdinand T. Day Elementary School will be Alexandria's second STEM focused elementary school when it opens this fall. The STEM curriculum will be integrated into students' daily instruction with a focus on empowering learners who are capable collaborators, critical thinkers, innovators, and creative communicators.

The Academy of Health Sciences is a joint venture between ACPS and the George Washington University that provides students the ability to receive up to 22 college credits and opportunities to identify career pathways in the fields of health and medicine.

Talent | Education | Primary, Secondary Education

B3.a.(i) Average ACT and SAT scores (provide average math, science, verbal, and total, as possible) for each of the past ten years.
B3.a.(ii) Graduation rates for the past ten years
B3.a.(iii) Percentage of graduates by gender and race/ethnicity matriculating to (please include for all programs and specifically for STEM programs):
1. Four-year colleges or universities
2. Two-year colleges or universities
3. Vocational and technical schools and programs

Alexandria's public secondary schools include two middle schools, Francis Hammond and George Washington, the Minnie Howard 9th-grade center, and one central high school, T.C. Williams (grades 10-12). Jefferson-Houston, which is a pre-K to eighth grade school, also offers secondary education from grades six to eight. Every student attending Jefferson-Houston participates in the school's International Baccalaureate program, which focuses on developing the whole child so he or she gains the intellectual, personal, emotional, and social skills needed to live, work, and learn in a global world.

At T.C. Williams, the STEM Academy is a school-within-a-school that offers a project-based curriculum where small teams of students with a deep interest in STEM and instructors address real-world engineering and technology problems.

T.C. Williams and Francis Hammond also offer the International Academy to address the unique needs of immigrant English learners as they accomplish the challenging task of graduating college-ready while simultaneously learning English.

The diversity of the ACPS student population is considered a core strength of Alexandria's school system.

Understanding that economically disadvantaged and English for Speakers of Other Languages (ESOL) students often face unique academic challenges, ACPS uses the Advancement via Individual Determination (AVID) system. AVID helps traditionally underrepresented students prepare for four-year college eligibility and over 90% of students participating in AVID are enrolled in an honors, advanced placement, or dual enrollment program. Programs like AVID are why George Washington M.S. has also been recognized as a model program by the American School Counselor Association and Francis Hammond M.S. as a most-improved school by the Virginia Department of Education.

Alexandria City Public Schools: District performance

| Year | ACT score | SAT | | | | Graduation Rates | Matriculation to postsecondary institution |
		SAT: Reading	SAT: Writing	SAT: Math	SAT: Total		
2017	18	493		484	977	83%	-
2016	21.3	496	482	480	1458	82%	82%
2015	20.6	481	474	478	1433	80%	88%
2014	20.7	490	476	485	1451	84%	82%
2013	20.5	485	473	476	1434	82%	78%
2012	20.4	485	474	477	1436	79%	83%
2011	20.3	477	469	473	1419	79%	96%
2010	20.2	482	475	479	1436	78%	88%
2009	20.7	482	482	472	1436	78%	90%
2008	21.7	496	493	493	1482	77%	77%

Source: Graduation rates from Washington Area Boards of Education (WABE) for 2010-2017 (Virginia Department of Education data for 2008-2009); Graduates attending postsecondary institutions (WABE); SAT from WABE

Talent | Education | Primary, Secondary Education

B3.b. Briefly describe capital improvement plan, timetable and plan of finance for school system and other significant program providers. Include capital investment in public schools over the last ten years. Also, include information on charter and magnet schools.

The City of Alexandria develops a 10-year capital improvement program (CIP) on an annual basis.

The city manager presents the Proposed CIP to the City Council in February of each year. This Proposed CIP reflects the capital funding needs developed and approved by the School Board.

School capital projects are predominantly funded by local funding sources. The City's approved CIP uses a mixture of cash and borrowing sources to fund school capital projects, which include the construction of new school facilities, major renovations, reconfigurations of existing facilities, and ongoing capital maintenance investments. The specific use of cash or borrowing is dependent on the scope and anticipated asset life of the school capital projects.

Historical funded capital investment in Alexandria City Public Schools
$ Millions
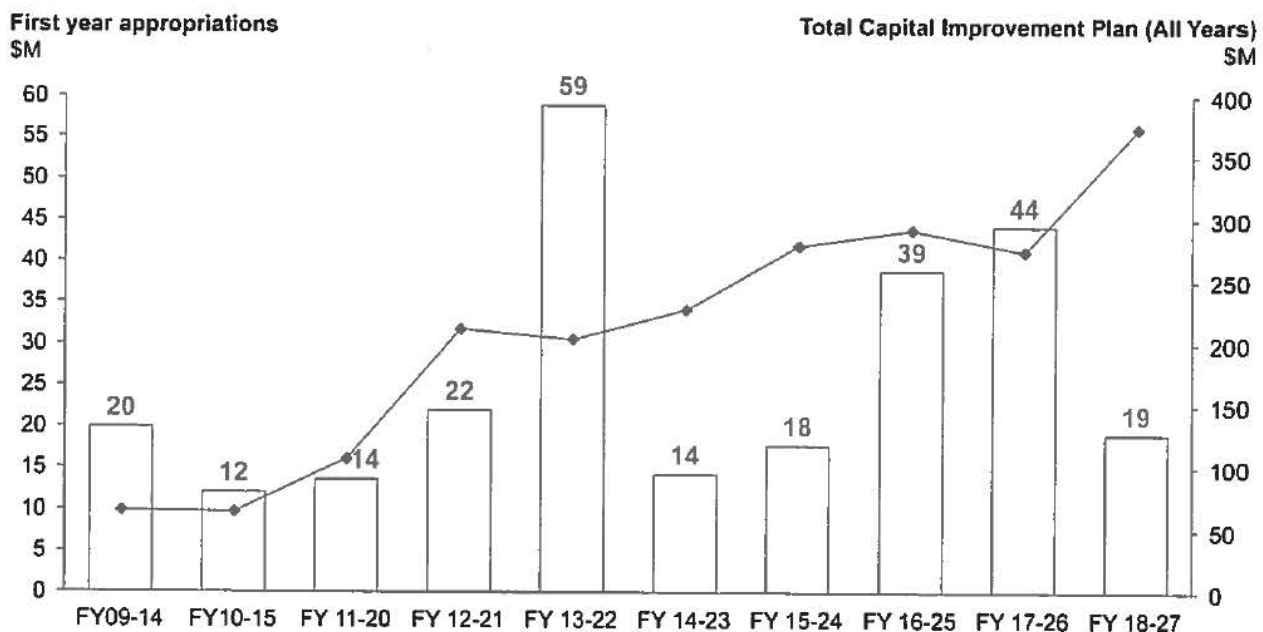
Source ACPS public documents

Talent | Education | Primary, Secondary Education

B3.c. Describe how education programs are funded at the municipal, county and state levels in your community as well as how and where community and private funding can be allocated.

Alexandria City Public Schools are overwhelmingly funded by local tax dollars. The annual operating and capital budgets for the public schools are part of the City's annual budget. It is the duty of the Superintendent, with the advice of the Alexandria City School Board, to prepare a school budget estimate each year. The school's budget estimate is submitted to the Alexandria City Council, which is responsible for making the final local appropriation for public education. The City's FY18 appropriation for operating expenses totaled $214 million, which equates to 83% of the division's total operating budget. This amount does not include the additional $19 million the City provided to fund capital improvements in FY18.

The second largest source of funding in the school's budget is from the Commonwealth of Virginia. In FY18 the state provided ACPS with $42 million. Education dollars provided through the state's General Fund are distributed using the basic school aid formula established by the Virginia General Assembly or as "categorical funds" designated to specific types of school programs. The state also returns 1% of the sales tax it collects to localities to be used for educational purposes.

ACPS is open to partnerships aimed at increasing STEM programming across the school division.

Funding is often used to purchase equipment, consumables, materials, and supplies to support STEM coursework.

The Scholarship Fund of Alexandria was created in 1986 to ensure all Alexandria students, regardless of socioeconomic background, have the opportunity to attend college. The Fund awards approximately $1 million in scholarships annually to approximately 300 high school seniors and college students ranging from $3,000 to $5,000. Alexandria would welcome partnerships that could increase the number of scholarships awarded.

THE SCHOLARSHIP FUND OF ALEXANDRIA

Talent | Education | Primary, Secondary Education

B3.d. State assessment results by performance level (basic, proficient and advanced), including (i) two-year trend data for each subject and grade tested and (ii) a comparison between annual objectives and actual performance for each student group.

Alexandria City Public Schools continues to make strides every year in ensuring that each child, no matter their economic circumstances, home language, or ability, is able to excel.

Alexandria City Public Schools		2015-2016		2016-2017	
		Pass Rate	Advanced Pass	Pass Rate	Advanced Pass
English: Reading	Grade-3 English Reading	75	23	70	22
	Grade-4 English Reading	72	22	72	26
	Grade-5 English Reading	75	25	77	29
	Grade-6 English Reading	68	23	67	16
	Grade-7 English Reading	75	14	73	16
	Grade-8 English Reading	68	15	69	15
	Grade 9-12 EOC English Reading	79	7	68	5
English: Writing	Grade-8 Writing	65	20	65	20
	Grade 9-12 EOC Writing	74	16	71	22
History & Social Sciences	Grade 9-12 Civics & Econ	83	27	79	25
	Grade 9-12 VA & US History	70	10	73	18
	Grade 9-12 VA Studies	82	38	80	37
	Grade 9-12 World History I	77	16	72	15
	Grade 9-12 World History II	70	10	75	19
Mathematics	Grade-3 Mathematics	69	16	67	16
	Grade-4 Mathematics	78	25	74	25
	Grade-5 Mathematics	63	13	65	14
	Grade-6 Mathematics	77	11	75	10
	Grade-7 Mathematics	64	10	64	11
	Grade-8 Mathematics	26	12	31	14
	Grade 9-12 Algebra I	63	2	64	2
	Grade 9-12 Algebra II	75	16	70	14
	Grade 9-12 Geometry	60	8	49	6
Science	Grade-5 Science	68	21	69	20
	Grade-8 Science	67	11	65	9
	Grade 9-12 Biology	70	11	64	11
	Grade 9-12 Chemistry	82	12	87	27
	Grade 9-12 Earth Science	66	3	63	2

Alexandria City Public Schools	2015-2016		2016-2017	
Subject	Pass Rate	Objective*	Pass Rate	Objective*
English: Reading	73	71	71	74
English: Writing	69	73	68	76
History & Social Sciences	77	79	76	81
Mathematics	68	69	66	72
Science	69	70	68	73

* Objective pass rates are based on the school division's strategic plan targets each year

B3.f. Special needs and alternative education programs (including programs currently in place, student/teacher ratios in those programs, and success measures for those programs).

Alexandria City Public Schools strive to provide students with the learning environment that best suits each student's needs.

To the extent possible, students will be integrated into the general classroom environment. Accordingly, the district provides an array of resources to support alternative education both within and outside of the traditional school environment. These resources include:

Program	Details
Special Education Services	The Alexandria City Public Schools uses a Continuum of Services model that provides services to students with disabilities ages two to 22. To the extent possible, special education services are integrated into the general education classroom and supported by a trained special education co-teacher. ACPS also offers a city-wide special education program for students with severe disabilities. Typical student-to-teacher ratios across all programs range from 6:1 to 10:1. ACPS instructors and administrators receive support from a specialized behavior and support team comprised of four board-certified behavior analysts who provide expert guidance to school instructional staff.
Early Childhood Special Education Services	The long-term goal of early childhood special education services is for preschool-aged children to be as ready as possible to enter kindergarten. To ensure this goal is achieved, ACPS provides a half-day preschool program for students with disabilities at school facilities. ACPS teachers also work in the Alexandria community with private preschool providers to offer instructional support and to share best practices.
Career Transition Services	Career Transition Services is a coordinated set of services for students with disabilities that promotes movement from school to post-school activities including postsecondary and vocational education and integrated full-time employment. Students are first employed by ACPS before transitioning to full-time work in the community. ACPS has been successful in placing students locally with Marriott, INOVA Alexandria Hospital, and the U.S. Patent and Trademark Office.
T.C. Williams Satellite Campus	The Satellite Campus offers students with a non-traditional school schedule a high quality online curriculum. Students are educated using online and traditional methods that includes individualized and small group settings. The Satellite Campus offers daytime and nighttime school shifts and students are able to participate in all extracurricular clubs, activities, and sports.
Chance for Change Academy	The Academy is designed to help students with behavior challenges improve their academic achievement through behavioral and therapeutic interventions incorporated into an instructional day. The Academy serves as a temporary placement for students whose matriculation in the traditional setting had been disrupted by various circumstances. Students are assigned an academic advisor and classrooms typically have a 7:1 student to teacher ratio.

Talent | Education | Primary, Secondary Education
B3.g. Accelerated learning/honors and AP track programs.

ACPS has an Equity and Excellence policy for advanced academic programs, which include students with disabilities and English language learners who seek increased academic rigor.

Program	Details
Middle school	At the middle school level, honors courses are offered in language arts, mathematics (including algebra and geometry), general and physical science, and social studies—all available for students in grades six to eight.
High school	High school honors courses are available in English, cience (biology, chemistry, and earth science), social studies, and the following languages: Chinese, French, German, Latin, and Spanish. T.C. Williams High School also offers 27 Advanced Placement Courses across a range of subjects. Science courses include computer science, biology, chemistry, physics C, and environmental science. AP statistics and AP calculus (AB and BC) are also offered. High school students have the opportunity to take part in Dual Enrollment courses, allowing students to earn college credit for courses they are taking in high school. The teachers follow the college curriculum, use college-approved textbooks, and are advised by a full-time college faculty member. Classes offered include: • Business & International Finance • Calculus with Analytical Geometry • Differential Equations • Entrepreneurship and Advanced Entrepreneurship • Engineering Statics and Strength of Materials

Talent | Education | Primary, Secondary Education

B3.h. Foreign language schools in your community
B3.h.(i). Languages offered
B3.h.(ii). Language immersion programs in regular K-12 schools (include languages offered and success measures)

Foreign language schools

T.C. Williams (9-12) and Francis C. Hammond Middle School offer the International Academy to address the unique needs of immigrant English learners as they accomplish the challenging task of graduating college-ready while simultaneously learning English. See question B3.h.(iii) for details.

Languages Offered: 6-12

| Chinese | French | German | Latin | Spanish |

Languages immersion programs:

The ACPS two-way Spanish-English Dual Language program serves over 1,000 children in two K-5 schools.

Mount Vernon Community School offers a whole school 50:50 program. English language arts and social studies are taught during the English half of the day, and Spanish language arts, science, and math are taught during the Spanish half of the day.

At John Adams Elementary School, Dual Language is offered in two to three classrooms per grade level. In kindergarten and first grades, most subjects are taught in Spanish for 70% of the day, with English language arts and specials taught in English. In Grades two-five, the program is similar to Mount Vernon's, in which students receive half of the day in each language.

Both schools enroll approximately half students who speak English at home and half students who speak Spanish at home. Students may continue the Dual Language program at Francis Hammond and George Washington Middle Schools.

B3.h.(iii). Cultural assimilation programs for immigrating students and their families (include success measures).

The International Academy, offered at T.C. Williams and at Francis C. Hammond Middle School, addresses the unique needs of immigrant English learners as they accomplish the challenging task of graduating college-ready, while simultaneously learning English.

Through the innovative use of strategic grouping, experiential learning, collaboration, and language and content integration, students are provided the targeted support and strategies required for their success.

The dedicated International Academy team includes bilingual counselors, a bilingual social worker, and a bilingual dean to ensure that students' needs are holistically addressed.

Additionally, the program offers targeted numeracy and literacy interventions, academic support classes, and a variety of after-school programs to promote student engagement in all aspects of school life.

Talent | Education | STEM Education
B4.a. Describe, to the extent not already discussed above, the STEM programs currently in place in your community.

In designing ACPS's latest STEM-focused elementary school (Ferdinand T. Day Elementary School), the division created a "portrait of a graduate" that included 21st-century learning principles around collaboration, digital citizens, creative communicators, computational thinkers, and innovative designers. These principles will be achieved through clearly articulated STEM design components that use mathematics, science, and engineering to solve real-world problems.

ACPS also uses a blended approach to learning that integrates technology into all aspects of curriculum implementation and learning. In STEM programs at all levels, our students engage in project-based capstone performance assessments to encourage choice of subject and approach, as well as independent inquiry.

Talent | Education | STEM Education

B4.b. Describe whether your current STEM programs are selective (i.e., criteria to gain enrollment and they are not in regular K-12 schools), inclusive (anyone can enroll but separate from regular K-12 schools), or comprehensive (included in regular K-12 schools).

ACPS STEM programs offer both selective and inclusive programs depending on the grade level and school:

Inclusive: Cora Kelly and the new Ferdinand T. Day Elementary Schools have been identified as general STEM schools, meaning students in all grades will have a STEM-focused curriculum.

Selective: The STEM Academy at T.C. Williams High School is designed to cater to students with a deep interest in STEM who do not feel their academic needs are being met in a traditional academic environment. This selective program requires an application process.

Talent | Education | STEM Education

B4.c. Describe the curriculum offered, how it is determined, how often it is reviewed and how long it takes to change the curriculum.

The ACPS Curriculum System is designed to promote students' higher-order reasoning and college and career competencies.

All curriculum guides emphasize students' ability to:

- Engage in authentic, real-world decision making, problem solving, and investigation
- Read complex text
- Use writing as a tool for self-expression
- Analyze and interpret statistical and linguistic data
- Think within the academic discipline
- Demonstrate effective speaking and listening skills

Major revisions to the curriculum occur every five to seven years and involve a process that engages outside experts and gathers community input through the school board. Recommendations and revisions to the curriculum are implemented over multiple years. More frequent audits of the 350 courses, gifted and talented program, and special education program occur on a routine basis using a continuous feedback system to make adjustments based on the needs of the student population and best practices.

Talent | Education | STEM Education

B4.d. Other student achievement indicators for STEM programs/participants to which you would like to call our attention.
B4.e. Plans for next five to ten years for STEM programs (to the extent not discussed in subsection A above).

ACPS uses a continuous improvement program to regularly evaluate the division's curriculum and programs.

This process allows for administrators and instructors to reflect upon and update the current curriculum and stay current with best practices and delivery models of instruction. One notable example is the recent decision to make the division's new West End Elementary School, which opens in August 2018, a STEM-focused school. In the future, as resources become available through public financing or partnerships, the division hopes to build upon its growing number of STEM-focused programs. It is also worth noting that ACPS is welcoming a new superintendent in July 2018 with deep experience and knowledge in STEM instruction and focus.

Children have seemingly endless opportunities to explore, experiment, and excel in Alexandria Public Schools, starting right from the beginning of their educational journey and extending into their careers and beyond.

Starting at age two, your child can go to any one of the high quality full or half-day programs for two- to four-year-old children.

Your child's preschool teacher will be a highly-qualified professional who has received extensive training in blending STEM learning into the district's creative curriculum, integrating the experiences your child picked up at the library and science center with the formal and informal opportunities for natural exploration of a child's environment in school.

Starting in kindergarten, you will have the opportunity to place your child in STEM-focused programs at Cora Kelly Elementary School or at Jefferson-Houston K-8 school, a designated International Baccalaureate program.

Your child will also build a worldly perspective, interacting with students hailing from over 120 countries while also learning any of the five foreign languages offered throughout the district. Your child could also attend one of the two Spanish dual language programs in the City, providing a strong multicultural educational experience from the start.

As your student matures, Alexandria's high school, T.C. Williams, provides a rigorous academic experience where your child can choose from 25 different AP classes while earning college credits through ACPS Dual Enrollment Program.

For the budding scientist or computer engineer, the high school offers a selective STEM Academy. If your student has an interest in healthcare, the recently launched Academy of Health Sciences can open your child up to the world of possibility within the healthcare field and place him or her on the path to medical school through the partnership with George Washington University. Last, to satiate your child's competitive spirt, T.C. Williams offers a range of athletic programs like baseball, lacrosse, gymnastics, and crew in addition to a wealth of enrichment activities like FIRST Robotics Club, the Dragonslayer's Club, or poetryNOW Club.

Alexandria's top-notch educational offerings and diverse STEM resources will leave your child with a wealth of opportunities to pursue after graduation.

Arlington Public Schools

K-12 Education within 5 Miles of Capital View
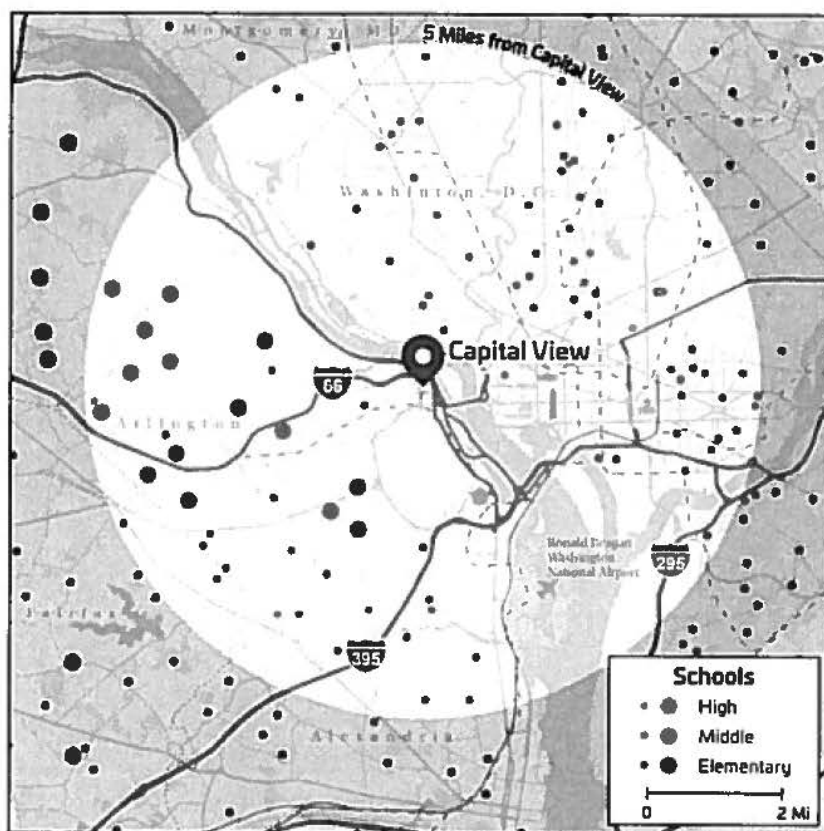
5 Miles from Capital View

Capital View

Schools
- High
- Middle
- Elementary

0   2 Mi

In Virginia

City of Alexandria Schools

Charles Barrett Elementary
Cora Kelly Elementary
George Mason Elementary
Mount Vernon Elementary

Fairfax County Schools

Bailey's Upper Elementary
Chesterbrook Elementary*
Glen Forest Elementary

Arlington County Schools

Abingdon Elementary
Arlington Science Focus *
Arlington Traditional *
Ashlawn Elementary *
Barcroft Elementary
Barrett Elementary
Bishop O'Connell High
Campbell Elementary
Carlin Springs Elementary
Claremont Elementary
Discovery Elementary
Drew Model Elementary
Patrick Henry Elementary *
Randolph Elementary
Swanson Middle *
Taylor Elementary *
Tuckahoe Elementary *

Glebe Elementary *
Gunston Middle
H-B Woodlawn Secondary Program
Hoffman-Boston Elementary
Jamestown Elementary *
Jefferson Middle *
Kenmore Middle
Key School/Escuela Key
Long Branch Elementary *
McKinley Elementary *
Nottingham Elementary *
Oakridge Elementary
Wakefield High
Walter Reed Elementary
Washington-Lee High *
Williamsburg Middle *
Yorktown High *

Washington, D.C. Schools

Amidon-Bowen Elementary
Bancroft Elementary
Barnard Elementary
Benjamin Banneker High
Brent Elementary
Brightwood Education Campus
Bruce-Monroe Elementary
Capitol Hill Montessori at Logan
Cardozo Education Campus
Cleveland Elementary
Deal Middle
Dorothy I. Height Elementary
Duke Ellington School of the Arts
Dunbar High
Eastern High
Eaton Elementary
Eliot-Hine Middle
Garrison Elementary
H.D. Cooke Elementary
Hardy Middle
Hearst Elementary
Hyde-Addison Elementary
J.O. Wilson Elementary
Janney Elementary
Jefferson Middle School Academy
Key Elementary
Lafayette Elementary
Langley Elementary
Ludlow-Taylor Elementary
MacFarland Middle
Mann Elementary
Marie Reed Elementary
Maury Elementary
McKinley Middle
McKinley Technology High
Miner Elementary
Murch Elementary
Noyes Elementary
Oyster-Adams Bilingual
Payne Elementary
Peabody Elementary
Powell Elementary
Raymond Education Campus
Roosevelt High
Ross Elementary
Savoy Elementary
School Without Walls High
School-Within-School at Goding
Seaton Elementary
Shaw Middle
Stoddert Elementary
Stuart-Hobson Middle
Thomson Elementary
Truesdell Education Campus
Tubman Elementary
Tyler Elementary
Van Ness Elementary
Watkins Elementary
West Education Campus
Wilson High

Montgomery County, MD Schools

Westbrook Elementary
Westland Middle

* Top Ranked Virginia Schools

K-12 Education within 5 Miles of National Landing

Outside Virginia

Washington, D.C. Schools
Amidon-Bowen Elementary
Anacostia High
Ballou High
Benjamin Banneker High
Brent Elementary
Capitol Hill Montessori at Logan
Cardozo Education Campus
Cleveland Elementary
Duke Ellington School of the Arts
Dunbar High
Eastern High
Eliot-Hine Middle
Garfield Elementary
Garrison Elementary
H.D. Cooke Elementary
Hardy Middle
Hart Middle
Hendley Elementary
Hyde-Addison Elementary
J.O. Wilson Elementary
Jefferson Middle School Academy
Johnson Middle
Ketcham Elementary
King Elementary
Kramer Middle
Langley Elementary
Leckie Elementary
Ludlow-Taylor Elementary
Malcolm X Elementary
Marie Reed Elementary
Maury Elementary
McKinley Middle
McKinley Technology High
Miner Elementary
Moten Elementary
Orr Elementary
Oyster-Adams Bilingual
Patterson Elementary
Payne Elementary
Peabody Elementary
Randle Highlands Elementary
Ross Elementary
Savoy Elementary
School Without Walls High
School-Within-School
Seaton Elementary
Shaw Middle
Simon Elementary
Stanton Elementary
Stoddert Elementary
Stuart-Hobson Middle
Thomson Elementary
Turner Elementary
Tyler Elementary
Van Ness Elementary
Watkins Elementary

Prince George's County, MD Schools
Glassmanor Elementary
Flintstone Elementary
Forest Heights Elementary
Panorama Elementary
Potomac High

* Top Ranked Virginia Schools

In Virginia

City of Alexandria Schools
Charles Barrett Elementary
Cora Kelly Elementary
Douglas MacArthur Elementary
Francis Hammond Middle
George Mason Elementary
George Washington Middle
James K. Polk Elementary
Jefferson-Houston Elementary
John Adams Elementary
Lyles-Crouch Elementary
Matthew Maury Elementary
Mount Vernon Elementary
Patrick Henry Elementary
T.C. Williams High
William Ramsay Elementary

Arlington County Schools
Abingdon Elementary
Arlington Science Focus*
Arlington Traditional*
Ashlawn Elementary*
Barcroft Elementary
Barrett Elementary
Campbell Elementary
Carlin Springs Elementary
Claremont Elementary
Drew Model Elementary
Glebe Elementary*
Gunston Middle

H-B Woodlawn Secondary Program
Hoffman-Boston Elementary
Jefferson Middle*
Kenmore Middle
Key School/Escuela Key
Long Branch Elementary*
Oakridge Elementary
Patrick Henry Elementary*
Randolph Elementary
Taylor Elementary*
Wakefield High
Washington-Lee High*

Fairfax County Schools
Cameron Elementary
Glen Forest Elementary

B1. Describe the educational system (from pre-K to 12 and graduate level) in high-level terms. Focus on their integration and cooperation as well as responsiveness to employer needs. If those areas are lacking, describe how your community proposes to address those deficiencies. Provide a map of each school within a 5-mile radius of each proposed real estate site.

Arlington Public Schools (APS) educate one of the nation's most diverse and sophisticated student populations.

The school division currently serves over 28,000 preK-12 students who come from 146 nations around the world and speak 107 different languages. The district includes 23 elementary schools, five middle schools, and four high schools. The district also operates one secondary school (grades six-12), the Arlington Career Center, and three other programs.

The 2018 Niche® national rating of K-12 public districts in the U.S. ranked Arlington Public Schools as the No. 1 school division in Virginia and No. 58 in the nation.

The district is also consistently ranked as a top school division by *U.S. News and World Report*, and *The Washington Post* Challenge Index has listed all three APS comprehensive high schools in the top 100 high schools in the metropolitan Washington area. 2017 was the ninth consecutive year that all APS high schools made the *The Washington Post* Challenge Index.

Academic standards are high, and students consistently score well above state and national averages on standardized tests, repeatedly surpassing their peers in the state and the nation.

All 32 APS schools have been fully accredited by the Virginia Department of Education, based on state and federal accountability ratings, for the last three years. Last year, Arlington's graduation rate was 91% overall, and 96% for APS students in the Class of 2017 who attended one of the three comprehensive high schools four years. Approximately 79% of graduating seniors completed one or more AP or IB classes, and 68% of APS graduates earned an advanced diploma.

Small class sizes and strong community support—through local funding and community partnerships—help to make APS a school division of excellence.

High quality teachers are also a hallmark of APS, with 82% of all teachers having earned one or more advanced degrees; and 190 APS teachers earned the challenging and prestigious National Board Certification for Teaching, the second-highest number in Virginia.

Recognizing that excellent management and innovation is critical to student success, APS is also the proud recipient of the prestigious Medallion of Excellence Award presented by the U.S. Senate Productivity and Quality Awards for Virginia and the District of Columbia. Since the award was established in 1983, APS is only the ninth school division in Virginia to receive this recognition.

APS actively pursues opportunities to engage employers and their needs, partnering with them to provide interdisciplinary experiences to all APS students.

Students also learn how to effectively apply their academic knowledge with skills developed in the Career Technical Education (CTE) classes, which are available to all high school students. APS also has a K-12 STEM pipeline that includes a variety of elementary experiences, an arts and technology middle school, and Arlington Tech, a project-based high school.

Arlington has STEM partnerships with many organizations including Accenture, the local Arlington Mercedes-Benz dealership, Marymount University, NASA, Northern Virginia Community College, Virginia Hospital Center, and many others. These partnerships provide opportunities for authentic problem- and project-based learning opportunities, such as creating a local bike share housed at Arlington Tech, creating education science videos "For Kids by Kids," and re-engineering electric toy cars for children with disabilities.

APS also actively recruits community partners and volunteers to support K-12 STEM and instructional programs through a broad range of engagement with civic, nonprofit, government, and business organizations. Partnerships provide in-kind donations, mentors, tutors, classroom speakers, science fair advisors, internships, and much more.

Talent | Education

B2. Describe early childhood education programs in your community, especially those focusing on STEM initiatives. Be specific in your description, including name and distance to proposed real estate sites.

All preschool classes are full-day programs, and many of these classes are housed in elementary schools with a STEM focus.

All of the early childhood teachers, regardless of their school location, have received specialized training in providing opportunities for exploring STEM through play and other classroom activities. In addition, APS is the only school division in Virginia where every preschool slot that is funded annually with state dollars is matched and filled with a four-year-old student. This represents a significant commitment for APS since state funds provide less than half of the Arlington cost per pupil, requiring a significant amount in matching funds from the district. Because of Arlington's strong commitment to pre-K, especially for low-income and second-language children, 90% of APS students have attended an APS or another pre-K program, significantly increasing their kindergarten readiness and laying the groundwork for success in their K-12 academic pursuits.

The Virginia Preschool Initiative program is a full-day preschool program offered to children who are four years old and meet the eligibility requirements of the program. APS has 35 Virginia Preschool Initiative classrooms for four-year-olds.

APS provides 19 full-day Montessori programs for children three to five years old.

Tuition for three- and four-year-old children is charged on a sliding fee schedule based on family income. No tuition is charged for children who continue in the program for their kindergarten, elementary, and middle school years.

	Distance from Capitol View	Distance from National Landing
Abingdon Elementary	6.2 miles	4.6 miles
Arlington Science Focus	2.4 miles	4.2 miles
Barrett Elementary School	3.9 miles	4.3 miles
Campbell Elementary	5.2 miles	5.7 miles
Hoffman-Boston Elementary	3.7 miles	2.1 miles
Taylor Elementary	3.1 miles	6.3 miles
Drew Model Elementary School	4.3 miles	3.8 miles

Talent | Education | Primary, Secondary Education
B3. Describe childhood education programs in your community focused on STEM initiatives.

Arlington Public Schools offers a high quality, developmentally-appropriate kindergarten program.

This full-day program is designed to meet the emotional, social, physical, and academic needs of children and is based on the Virginia State Standards, APS curriculum, and APS best practices.

More than 96% of APS students earn one or more high school credits during middle school.
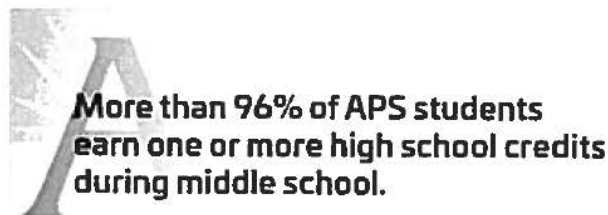
Overall, Niche.com ranked APS as the top school division in Virginia and 59th in the nation. The Top 10 elementary schools in Virginia are all from APS, and all five middle schools are in the top 30.

Two notable STEM programs include:

Program	Details
	Arlington Science Focus School is designed to develop extensive understanding of science content and process through inquiry-based learning. Students are engaged in weekly multi-age "Science City" experiments. They participate in hands-on activities dealing with ecology, biology, geology, zoology, physics, astronomy, and chemistry that are directly correlated to the Virginia Standards of Learning.
	Discovery Elementary School children are challenged and encouraged to reach their highest potential through research-based instructional practices. At Discovery Elementary School, children are challenged and encouraged to reach their highest potential through research-based instructional practices. A rigorous academic curriculum is complemented by a focus on social and emotional wellness. Discovery Elementary is housed in Virginia's first-ever net zero building.

Talent | Education | Primary, Secondary Education

B3.a.(i) Average ACT and SAT scores (provide average math, science, verbal, and total, as possible) for each of the past ten years.

B3.a.(ii) Graduation rates for the past ten years

B3.a.(iii) Percentage of graduates by gender and race/ethnicity matriculating to (please include for all programs and specifically for STEM programs):

1. Four-year colleges or universities
2. Two-year colleges or universities
3. Vocational and technical schools and programs

APS offers a robust interdisciplinary experience to all high school aged students, with leading STEM curriculums, extensive opportunities for advanced coursework, and a record of high achievement on performance indicators.

91% of APS students in the Class of 2016 graduated on time, and over two-thirds earned an Advanced Studies or IB diploma. Among APS students in the 2016 cohort who attended Wakefield, Washington-Lee, or Yorktown for the four-year period, the graduation rate was 97%. Among all graduates responding to a survey, 91% reported that they plan to continue their education at two- and four-year colleges and were awarded over $32 million in scholarship funds.

Arlington County Public Schools: District performance							
		SAT					
Year	ACT score	SAT: Reading	SAT: Writing	SAT: Math	SAT: Total	Graduation Rates	Matriculation to postsecondary institution
2017	26.7	602		596	1198	91%	-
2016	25.3	478		438	916	91%	91%
2015	25.6	573	558	578	1709	93%	92%
2014	24.9	561	544	562	1667	90%	93%
2013	25.2	564	548	564	1676	90%	92%
2012	24.3	559	545	564	1668	88%	92%
2011	23.1	555	541	563	1659	88%	90%
2010	24.6	557	544	566	1667	85%	89%
2009	23.4	547	529	554	1630	85%	89%
2008	22.0	542	535	553	1630	83%	89%

Source: Graduation rates from Washington Area Boards of Education (WABE) for 2010-2017 (Virginia Department of Education data for 2008-2009); Graduates attending postsecondary institutions (WABE); SAT from WABE

Washington-Lee is a public high school, grades 9-12. The school opened in September, 1924 and boasts a diverse student population representing more than 50 countries. Washington-Lee is proud of its history and traditions, which include honors by the U.S. Department of Education, the Virginia Board of Education, the Virginia Department of Education, and *The Washington Post*. Washington-Lee's new building, completed in the summer of 2009, has been awarded Gold certification in the Leadership in Energy and Environmental Design (LEED) program by the U.S. Green Building Council.

Since becoming an authorized IB World School, Washington-Lee has consistently ranked in the top 100 of America's Best High Schools according to *Newsweek* and *The Washington Post*. In addition to these programs and course offerings, APS provides gifted services to K-12 students, providing students with added opportunities to think abstractly and work at various rates and levels of complexity.

#18
US News & World
Report Best HS
in Virginia

#53 (Silver Medal)
US News & World
Report Best HS
in the US

#1
International
Baccalaureate Program
School in Virginia

Arlington County Public Schools: Washington-Lee High School				
Year	ACT score	SAT: Total	Graduation Rates	Matriculation to postsecondary institution*
2017	27.4	1224	94%	N/A
2016	26.4	1702	95%	N/A
2015	25.9	1699	94%	84%
2014	24.4	1686	93%	84%
2013	N/A	1640	91%	82%
2012	N/A	1622	88%	79%
2011	N/A	1604	90%	76%
2010	N/A	1671	85%	75%
2009	N/A	1628	87%	76%
2008	N/A	N/A	85%	78%
* Percent enrolling in college at any time within the first sixteen months after graduating high school				
Source: Arlington County Public Schools				

Yorktown is a public high school, grades 9-12. The school opened in 1960 and graduated its first class in 1962. The students at Yorktown High School reflect Arlington's rich diversity. Yorktown's primary goal is to provide all students a first-rate academic education while fostering the development of the social and emotional skills for success in life. The faculty and community commitments to this primary goal make Yorktown a challenging and unique secondary school. Over 90 percent of Yorktown graduates pursue post-secondary education; others go on to the military or join the workforce after graduation.

BEST
HIGH SCHOOLS
USN
#6
US News & World Report Best HS in Virginia

BEST
HIGH SCHOOLS **(Gold Medal)**
USN
#225
US News & World Report Best HS in the US

Arlington County Public Schools: Yorktown High School				
Year	ACT score	SAT: Total	Graduation Rates	Matriculation to postsecondary institution*
2017	27.5	1241	96%	N/A
2016	26.4	1752	97%	N/A
2015	26.6	1768	98%	87%
2014	27	1724	95%	86%
2013	N/A	1720	97%	84%
2012	N/A	1747	94%	84%
2011	N/A	1715	95%	77%
2010	N/A	1725	93%	83%
2009	N/A	1732	92%	80%
2008	N/A	N/A	92%	82%
* Percent enrolling in college at any time within the first sixteen months after graduating high school				
Source: Arlington County Public Schools				

Wakefield High School represents the finest of the 21st-century schools, serving a truly multicultural student body. Residing in a brand new, state-of-the-art building, Wakefield provides challenges and academic rigor to all students. Through sound instruction supporting all students' success, the faculty and staff commit themselves to meeting each student's academic and career goals.

In addition to coursework in French, Latin, German, Mandarin, Japanese, and Arabic, Wakefield is also home to Arlington's high school Spanish Immersion Program. Wakefield offers an outstanding fine arts program, and the drama department partners with Signature Theatre, allowing students to be involved in live, professional stage productions. Unique to Wakefield is the school's partnership with Urban Alliance, which places selected seniors in paid internships in Arlington and Washington, D.C. Wakefield students can also participate in 50 clubs and 19 sports.

Arlington County Public Schools: Wakefield High School

Year	ACT score	SAT: Total	Graduation Rates	Matriculation to postsecondary institution*
2017	21.2	1079	88%	N/A
2016	20.4	1431	88%	N/A
2015	20.9	1462	91%	76%
2014	20.9	1417	87%	82%
2013	N/A	1468	84%	76%
2012	N/A	1398	79%	73%
2011	N/A	1423	75%	69%
2010	N/A	1457	77%	72%
2009	N/A	1409	74%	62%
2008	N/A	N/A	65%	71%

* Percent enrolling in college at any time within the first sixteen months after graduating high school
Source: Arlington County Public Schools

Talent | Education | Primary, Secondary Education

B3.b. Briefly describe capital improvement plan, timetable and plan of finance for school system and other significant program providers. Include capital investment in public schools over the last ten years. Also, include information on charter and magnet schools.

APS develops a 10-year Capital Improvement Plan (CIP) every two years.

Each plan re-evaluates and/or confirms the previous plan to reflect changes in enrollment projections, emerging capital conditions that may impact the plan, and adjustments in the School Board's priorities. Every CIP includes two broad categories of projects: Major Construction (MC) and Minor Construction/Major Maintenance (MC/MM). MC projects include new buildings, additions, and renovations. MC/MM projects primarily include HVAC, roofing, and infrastructure improvements. Regardless of the category, all CIP projects have a useful life of 20 years or more. Most CIP projects are funded by general obligation bonds but may also be funded with current revenues set aside in capital project reserves.

In Virginia, school boards do not have taxing authority and are fiscally dependent on the local governing body—in this case, the Arlington County Board. The Virginia Constitution requires that long-term debt be approved only by voter referendum, and there is no statutory limit on the amount of debt the voters can approve. APS is responsible for paying Arlington County for all debt incurred for school purposes. The School Board manages its debt service to ensure compliance with the County's fiscal policies regarding the prudent use of bond financing which, coupled with expanded policies regarding County reserves and planning and budgeting, help ensure maintenance of the County's triple-A ratings.

Voters approve bond referenda every two years for projects outlined in the CIP. Bonds have ranged from $12M to $138.8M and have an average approval rating of 78%. Once approved, bonds are sold annually to meet the immediate cash flow needs for the projects.

Historical funded capital investment
$ Millions
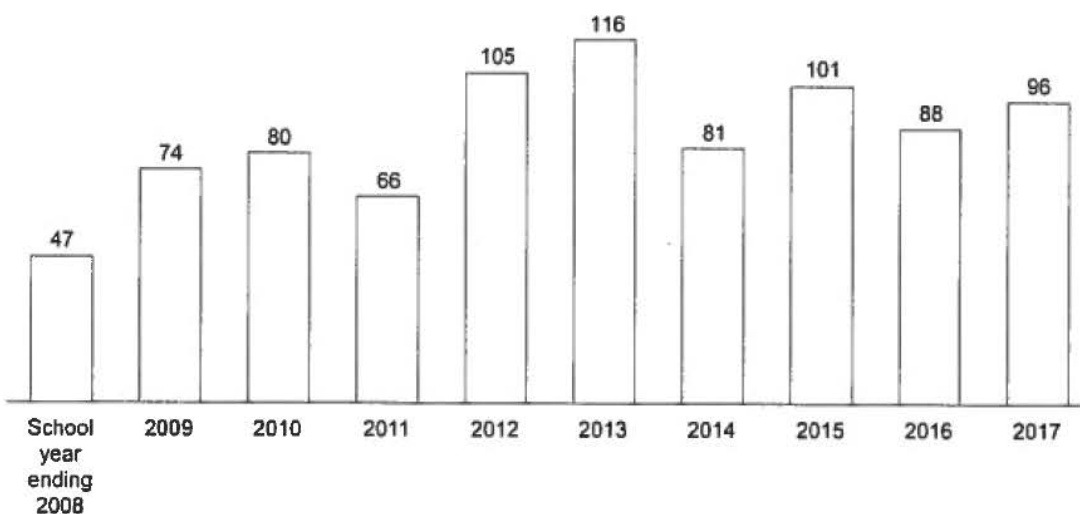
Source: ACPS public documents

Talent | Education | Primary, Secondary Education

B3.c. Describe how education programs are funded at the municipal, county and state levels in your community as well as how and where community and private funding can be allocated.

The majority of school operating funds come from Arlington County. The APS budget is made up of 79.7% of local Arlington funds; 11.8% of state funding; 2.3% of federal funding, and 6.2% of other funding sources (e.g., building use fees, adult education fees, and breakfast and lunch fees).

Talent | Education | Primary, Secondary Education

B3.d. State assessment results by performance level (basic, proficient and advanced), including (i) two-year trend data for each subject and grade tested and (ii) a comparison between annual objectives and actual performance for each student group.

Arlington County Public Schools continues to make strides every year in ensuring that each child, no matter their economic circumstances, home language, or ability, is able to excel.

Arlington County Public Schools		2015-2016		2016-2017	
		Pass Rate	Advanced Pass	Pass Rate	Advanced Pass
English: Reading	Grade-3 English Reading	89	28	85	30
	Grade-4 English Reading	86	32	87	34
	Grade-5 English Reading	89	43	89	39
	Grade-6 English Reading	83	33	86	34
	Grade-7 English Reading	87	24	86	26
	Grade-8 English Reading	83	22	85	26
	Grade 9-12 EOC English Reading	89	13	89	11
English: Writing	Grade-8 Writing	83	38	86	40
	Grade 9-12 EOC Writing	87	35	86	39
History & Social Sciences	Grade 9-12 Civics & Econ	87	27	87	24
	Grade 9-12 Geography	88	18	88	22
	Grade 9-12 VA & US History	88	17	86	18
	Grade 9-12 VA Studies	89	52	90	52
	Grade 9-12 World History I	81	13	79	10
	Grade 9-12 World History II	87	26	89	31
Mathematics	Grade-3 Mathematics	86	29	83	27
	Grade-4 Mathematics	89	41	87	37
	Grade-5 Mathematics	88	42	88	41
	Grade-6 Mathematics	87	22	87	20
	Grade-7 Mathematics	78	22	80	27
	Grade-8 Mathematics	86	17	84	15
	Grade 9-12 Algebra I	87	12	90	14
	Grade 9-12 Algebra II	91	25	90	27
	Grade 9-12 Geometry	85	20	86	19
Science	Grade-5 Science	86	34	82	30
	Grade-8 Science	86	25	85	25
	Grade 9-12 Biology	87	21	88	24
	Grade 9-12 Chemistry	88	22	91	25

Annual test objectives for each student group are developed by the individual schools. Further information can be provided upon request.

Talent | Education | Primary, Secondary Education
B3.e. Primary and secondary school rankings at the state/national level as well as a "scatter map.

See map in the introduction to this section.

B3.f. Special needs and alternative education programs (including programs currently in place, student/teacher ratios in those programs, and success measures for those programs).

Arlington's public school system is committed to supporting students of all abilities in obtaining a first-class education.

Three nontraditional programs are offered at the high school level to better meet student needs.

Program	Details
High School Continuation program	The High School Continuation Program at Langston offers students, age 16 and older, the opportunity to earn high school credits in a small and supportive environment.
New Directions High School	New Directions High School provides at-risk, court-involved students age 14 and older with academic and career opportunities in a small and nurturing environment.
Arlington Community High School	Arlington Community High School offers students age 16 and older, an alternative way to earn a high school diploma, providing a flexible schedule to accommodate the needs of older students.

Arlington Public Schools provides extensive coursework, programs, and resources to support students seeking accelerated learning opportunities.

Opportunities to take advanced coursework exist at both the middle school and high school levels, and students may pursue extracurricular enrichment opportunities through partnerships with a number of gifted learning programs.

High school programs	Details
High school courses	High school courses are also offered at all middle schools, with many middle school students completing at least one level on world languages and more than three-quarters taking Algebra I or Geometry (gateway courses for higher level high school classes) by the end of eighth grade.
Dual enrollment courses	Dual enrollment courses at each of the high schools allow students to earn college credits while still in high school.
Extensive AP offerings	Extensive Advanced Placement offerings are available at all high schools as well as opportunities to pursue a myriad of industry certifications. Because of the variety of accelerated learning/honor and AP opportunities, 79% of APS graduates have completed one or more college level courses and 68% of students earn an advanced diploma.

Students also have numerous opportunities to learn about STEM disciplines and careers outside of school:

Gifted Education Partnerships

- Clemson University Summer Science and Academic Enrichment Program
- University of Connecticut Mentor Connection
- University of Delaware Summer College
- Duke Talent Identification Program
- Gifted Education Resource Institute – Purdue University
- Green River Preserve – Camp for Academically Gifted Youth
- Johns Hopkins Center for Talented Youth
- Summer Institute for the Gifted
- Vanderbilt Program for Talented Youth
- University of Virginia Summer Enrichment Program
- Western Virginia Wesleyan College Summer Gifted Program

Math, Science, and Technology

- Alfred University – Astronomy Camp
- Boston University PROMYS Program
- Canada/USA Math Camp
- Clemson University Summer Science and Academic Enrichment Program
- Forensic Archeology at Catholic University
- Frontiers Program at Worcester Polytechnic Institute
- George Mason University Summer Mathematics for Talented Youth
- Jump Start at University of Maryland (week-long summer science immersion program)
- Launch Program at Worcester Polytechnic Institute
- Marine Science Consortium at Wallops Island
- National Youth Science Camp
- NIH Summer Internship Program in Biomedical Research
- Office of Naval Research SEAP Program
- Pre-College Program|Penn Summer
- STEM Summer Program at GWU
- Smith Summer Science and Engineering Program (9th-12th grade women)
- Summer Science Program (New Mexico or California)
- C-Tech^2 – Computers and Technology at Virginia Tech (11th-12th grade women)
- Women's Technology Program at MIT

Talent | Education | Primary, Secondary Education

B3.h. Foreign language schools in your community
B3.h.(i). Languages offered
B3.h.(ii). Language immersion programs in regular K-12 schools (include languages offered and success measures).

Languages Offered

Chinese   French   German   Latin   Spanish
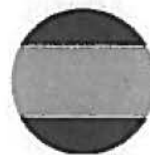
Arabic   American Sign Language   Japanese

APS provides a Spanish Immersion K-12 STEM pipeline program option that is open to all students in Arlington County.

Arlington offers a variety of cultural assimilation programs to support immigrating students and their families.

As part of our Family and Community Engagement focus, parents can participate in the *Participa* program which is a curriculum designed for immigrant parents who want to deepen their understanding of how the U.S. school system works to navigate it effectively and strengthen their ability to support and advocate for their children's education.

APS also employs Bilingual Family Liaisons in all schools to assist families in assimilating to their school and better understanding the school system as a whole. Their work, ranging from hosting parent meetings and informing them of the roles of various staff members to scheduling meetings that help them get enrolled in their schools' communication systems, is vital to the success of our students. In addition, HILT Resource Counselors work directly with students to help them assimilate into the school and their school community. These services include individual, group workshops, counseling, and (if needed) crisis intervention.

Staff supporting cultural assimilation programs also:
• Provide individual and group multicultural and multilingual counseling services
• Assist in the cultural, social, and emotional adjustment
• Work with school staff and students in resolving crisis situations
• Assist in resolving conflicts arising from cross-cultural misunderstandings
• Assist students in developing decision-making skills and coping skills
• Assist students in developing awareness of academic, social, and career alternatives in APS and beyond
• Provide career and vocational counseling
• Connect families to community resources

Additional programs include Parent Leadership Facilitation training for parent organizers and leaders as well as Harvesting Dreams, a fall family resource fair that includes learning circles for families.

Talent | Education | STEM Education

B4.a. Describe, to the extent not already discussed above, the STEM programs currently in place in your community.

Arlington Tech is Arlington's countywide secondary STEM program and provides a rigorous, project-based high school learning option that prepares students to succeed in college and in the workplace through collaborative problem solving. As a full day high school program, teachers integrate career technical education classes with the academic classes throughout each student's four-year high school career.

APS provides STEM opportunities to students across the school division in all K-12 schools and programs. School program and curriculum highlights include high school courses for all students that include AB, IB, and dual-enrollment computer science courses; engineering; and dual-enrollment multimedia and web technologies courses.

Talent | Education | STEM Education

B4.b. Describe whether your current STEM programs are selective (i.e., criteria to gain enrollment and they are not in regular K-12 schools), inclusive (anyone can enroll but separate from regular K-12 schools), or comprehensive (included in regular K-12 schools).

APS provides STEM opportunities to students across the school division in all K-12 schools and programs.

In addition to the STEM schools described previously, all APS students have opportunities to engage in STEM-related pursuits such as coding and engineering nights; elementary and middle school summer classes in coding and problem-based and project-based learning; the NOVA Maker Faire and the USA Science & Engineering Festival; the D.C. STEM network; and high school courses for all students that include AB, IB, and dual enrollment computer science courses; engineering; and dual-enrollment multimedia and web technologies courses.

APS elementary and middle school programs are not selective and are available to students throughout APS.

Arlington Tech, the high school program, is open to all students across the system who have successfully completed Algebra I, and some high school STEM courses may have prerequisites to enroll.

Talent | Education | STEM Education

B4.c. Describe the curriculum offered, how it is determined, how often it is reviewed and how long it takes to change the curriculum.

The curriculum is determined by teams of teachers and content-area specialists who build upon Virginia's Standards of Learning.

It is reviewed on an annual basis and throughout the year as teachers are planning in professional learning communities and build on their successes.

A central philosophy of the curriculum is to meet the needs of learners who thrive in hands-on, project-based, and work-based learning experiences.

The curriculum is anchored in projects that connect to an authentic, real-life problem or challenge. Through project-based learning, students develop critical thinking, creativity, communication, collaboration, and problem solving as they work in teams.

Partnerships with local businesses and global corporations provide internship opportunities for students to apply the skills and knowledge they develop in their courses in a workplace environment.

The strengths of community partnerships, variety of rigorous course offerings, and dedication to authentic learning experiences provide rich STEM learning experiences for students throughout APS.

In addition, a number of APS parent communities sponsor and support after-school clubs so students can participate in the international "Odyssey of the Mind" friendly competitive program, which provides additional creative and collaborative problem-solving opportunities for teams of students in kindergarten through grade 12.

APS's emphasis on STEM also includes a commitment to resourcing the classrooms so that every student has the tools to explore the physical and virtual world.

In 2011, APS launched a program to provide personal learning devices for all students in grades two through twelve. All elementary and middle school students receive an iPad for use in the classroom and at home, and high school students are provided with Macbook Airs.

These devices serve as a tool to support each student's personalized learning and provide many wonderful benefits:

- Classrooms are student centered and teachers serve as facilitators to guide learning rather than just being gatekeepers for a single source of knowledge.
- Students are challenged to think critically and use higher order level skills.
- Students are more engaged in learning with more opportunities to take control of their learning.
- Teachers can offer immediate feedback to help students adjust their thinking and improve their work.
- Students and teachers can communicate easily, both inside and outside of school.
- Students are exploring more creative ways to solve problems, express their ideas, generate new learning, and develop skills to work as part of a team in the classroom and virtually.

Talent | Education | STEM Education

B4.e. Plans for next five to ten years for STEM programs (to the extent not discussed in subsection A above).

APS will continue to strengthen our K-12 STEM programs, including expanding key instructional elements to all elementary schools; establishing further partnerships with community and post-secondary educational partners; and integrating a K-12 coding curriculum for all students.

The secondary curriculum also allows students to pursue academic opportunities in science, technology, engineering, arts, and mathematics (STEAM). Advanced courses include the Advanced Placement (AP) and International Baccalaureate (IB) programs. In addition, working closely with Northern Virginia Community College, students have many opportunities to earn high school and college credits simultaneously by enrolling in the many dual-enrollment classes offered.

Arlington offers children a strong STEM experience starting from the earliest age.

The community directly provides over 1,000 young children robust early childhood experiences, including 19 Montessori early-childhood programs for three- and four-year olds and 35 four-year-old classrooms through the Virginia Preschool Initiative. All preschool classes are full-day programs, many of which are housed at the local elementary schools, and are taught by well-qualified and trained teachers. In fact, all early childhood teachers, regardless of school location, have received specialized training in providing opportunities for exploring STEM through play and other classroom activities.

As your child enters any one of the 23 elementary schools and five middle schools, your child will have ample opportunities to explore fields in science and technology. Students throughout APS, regardless of the school they attend, have opportunities to engage in many STEM-related pursuits such as coding and engineering nights. On the computer science front, elementary and middle school summer classes in coding and problem-based and project-based learning will expose your child to design engineering thinking from a young age—skills that will continue to be honed in any one of APS's five secondary schools.

All schools allow students to pursue opportunities in STEAM, including AP and International Baccalaureate programs.

Outside of the class, students have a wealth of enrichment opportunities, including NOVA's Maker Faire experience, the USA Science and Engineering Festival, and the D.C. STEM network. For children specifically interested in computer science and/or engineering, AP, IB, and dual enrollment courses in computer science and engineering will help build a top-notch foundation for your budding computer scientist or engineer.

Fairfax County Public Schools

K-12 Education within 5 Miles of Innovation Station
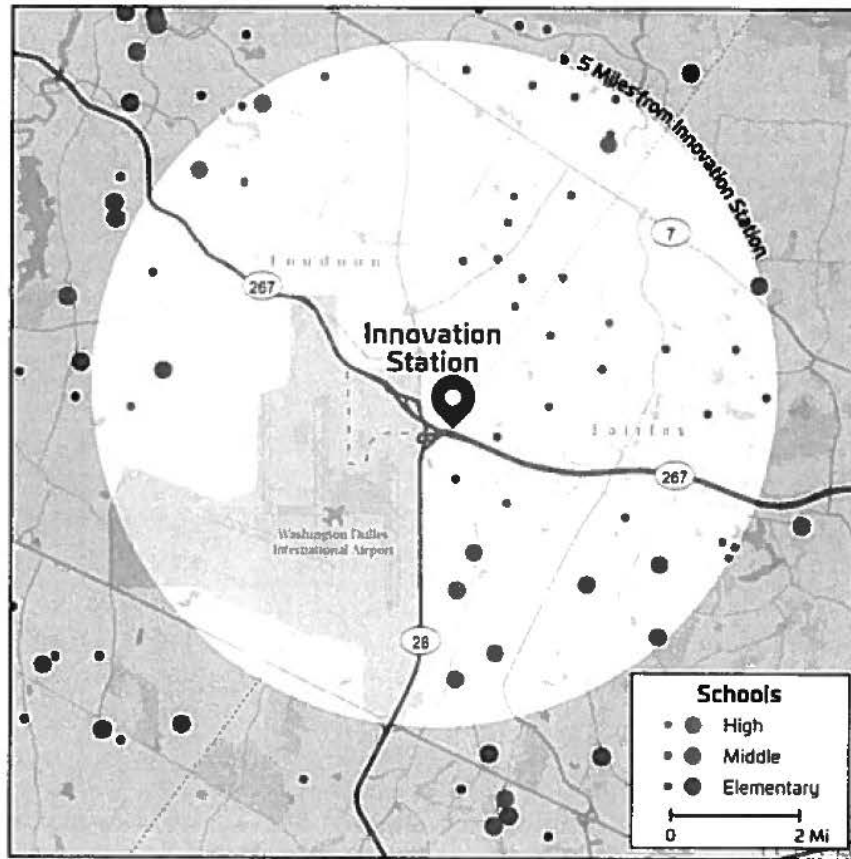
In Virginia

Loudoun County Schools

Broad Run High*	Potowmack Elementary
Countryside Elementary	Rock Ridge High
Discovery Elementary	Rolling Ridge Elementary
Dominion High*	Rosa Lee Carter Elementary*
Dominion Trail Elementary	Seneca Ridge Middle
Farnwell Station Middle*	Sterling Elementary
Forest Grove Elementary	Sterling Middle
Guilford Elementary	Steuart W. Weller Elementary
Meadowland Elementary	Stone Hill Middle
Moorefield Station Elementary	Sugarland Elementary
Park View High	Sully Elementary

Fairfax County Schools

Aldrin Elementary	Franklin Middle*
Armstrong Elementary	Herndon Elementary
Carson Middle*	Herndon High
Clearview Elementary	Herndon Middle
Coates Elementary	Hughes Middle
Crossfield Elementary*	Hunters Woods Elementary*
Dogwood Elementary	Hutchison Elementary
Dranesville Elementary	Lake Anne Elementary
Floris Elementary*	McNair Elementary
Forest Edge Elementary	Oak Hill Elementary*
Forestville Elementary*	South Lakes High
Fox Mill Elementary*	Terraset Elementary

* Top Ranked Virginia Schools

Talent | Education

B1. Describe the educational system (from pre-K to 12 and graduate level) in high-level terms. Focus on their integration and cooperation as well as responsiveness to employer needs. If those areas are lacking, describe how your community proposes to address those deficiencies. Provide a map of each school within a 5-mile radius of each proposed real estate site.

Educating for the real world of tomorrow.

Fairfax County Public Schools (FCPS) is a catalyst that transforms our community's most valuable potential – our children – and shapes a thriving future. We are the community's gathering place where, together, we foster creative thinking, a culture of caring, and lifelong connections. In our schools, students share a diversity of experiences that prepare them for success in a global society; teachers creatively challenge and inspire young minds; and parents actively engage in their children's future.

Our top-performing school district consistently outperforms the state and nation in terms of overall composite scores for the SAT and ACT exams. We are the 10th largest school division in the U.S. and serve a highly diverse student population of more than 188,000 students in grades pre-kindergarten through 12.

FCPS has an increased focus on developing authentic and relevant opportunities for work-based learning for students through collaboration with business and industry partners.

Work-based learning (WBL) provides students with a continuum of career-related experiences that support their career goals and prepares them for education and employment beyond high school. In partnership with businesses and community organizations, WBL extends the classroom into the workplace, transforming acquired knowledge and abilities into the skills that employers are seeking for their workforce. Work-based learning opportunities are available for all learners in FCPS from elementary school through adulthood.

A continuum of WBL experiences has been developed to guide learners through the process of career exploration:

- **Career Awareness** - Awareness of the variety of careers available and the role of postsecondary education to broaden student options.

- **Career Exploration** - Develops knowledge related to a career interest, a potential career pathway, and workplace readiness skills to inform decision making in high school and postsecondary education.

- **Career Preparation** - Application of learning through practical experience that develops knowledge and skills necessary for success in a clear pathway that moves towards employment and postsecondary education.

Talent | Education

B2. Describe early childhood education programs in your community, especially those focusing on STEM initiatives. Be specific in your description, including name and distance to proposed real estate sites.

STEM exposure starts early in Fairfax.

The Fairfax County Office for Children is a resource for information about child care, child development and school readiness, and early childhood education programs in our community. Education programs are offered by the Fairfax County Public Schools, Fairfax County Park Authority, Fairfax County Public Library, and numerous private organizations. Many classes, camps, and special events are focused on STEM topics.

Fairfax provides three primary channels for early childhood education:

Channel	Details
Virginia Preschool Initiative (VPI)	The VPI program is a full-day preschool program offered to children from disadvantaged or otherwise unique (e.g., military parent deployed, incarcerated parent, ELL) circumstances who are four years old and meet the eligibility requirements of the program.
Early Childhood Special Education (ECSE)	Child Find services are provided for children ages 20 months through five years to identify children with potential special education needs.
Other programs	FECEP/Head Start is for children three-five years old whose parents meet income requirements. Early Head Start is for infants, toddlers, or expectant mothers who meet income requirements.

Preschool locations	Distance from Innovation Station
Clearview Elementary	2.7 miles
Herndon Elementary	3.6 miles
Hutchison Elementary	3.1 miles
Dranesville Elementary	3.4 miles
Hopkins House InNoVative Preschool, a VPI Partner	3.9 miles
Floris UMC Preschool, a FCPS Partner	4.3 miles
TLC4 Kids Children's Center, a VPI Partner	5.3 miles
Vale UMC Preschool, a FCPS Partner	8.7 miles

The nonprofit Children's Science Center is dedicated to instilling a love of learning STEM in all children with an interactive exploration center that incorporates traditional museum exhibits with cutting-edge discovery experiences. Programs include family-fun events, school field trips, and programs for preschoolers as well as homeschoolers. Exhibits include the Experiment Bar, Tinker Shop, Inspiration Hub, and Discovery Zone. In addition, the center's Budding Scientist program holds weekly meetings for preschool-aged children (age two-five years) and an engaged accompanying adult.

children's science center™
EXPLORE CREATE INSPIRE.

Programs are also provided through The Herndon Fortnightly Library, such as Preschool Stories & Science, an early literacy story time with songs and science held monthly for children ages three-five years (with an adult), and Riverbend Park for Preschooler, a monthly program during which park staff present topics related to natural sciences to children ages two-five years (with an adult).

Talent | Education | Primary, Secondary Education

B3. Describe childhood education programs in your community focused on STEM initiatives.
B3.a.(i) If secondary school, average ACT and SAT scores (provide average math, science, verbal, and total, as possible) for each of the past ten years.
B3.a.(ii) Graduation rates for the past ten years
B3.a.(iii) Percentage of graduates by gender and race/ethnicity matriculating to (please include for all programs and specifically for STEM programs):
1. Four-year colleges or universities
2. Two-year colleges or universities
3. Vocational and technical schools and programs

FCPS uses the STEAM instructional model that integrates Science, Technology, Engineering, the Arts, and Mathematics to deepen content understanding.

STEAM is based on student-driven inquiry and problem solving to facilitate innovation through collaboration, communication, creativity, and critical thinking.

At the elementary school level, the number of STEAM labs located within FCPS elementary schools continues to grow.

STEAM labs provide a dedicated space and a STEAM instructor to provide an opportunity for students to enrich and apply their content knowledge to develop a solution to a challenge or problem presented through the class. Students use the Engineering Design Process to solve challenges in small collaborative groups.

At the middle and high school level, the STEAM Project team has focused on expanding coursework, innovative programming, and summer enrichment for students.

FCPS was awarded the three-year VDOE High School Innovation Planning Grant to develop an integrated high school STEM program in the summer of 2015. The program, Global STEM Challenges, is offered at Edison High School and currently is in its second year with two cohorts of students. Another example of how FCPS is bringing advanced science courses into middle school is the Coding & Innovative Technology (CIT) course, which introduces students to coding and emerging technology through hands-on projects.

Programs targeting underrepresented groups include:

Young Scholars program

Designed to increase the proportion of historically underrepresented students in its K-8 advanced academic programs. In this model, school administrators, teachers, and advanced academic resource teachers work together to find and nurture gifted potential in young learners and prepare them for more challenging and rigorous courses. Through flexible grouping, summer school, and after-school programs, students are provided an educational setting that raises their personal expectations and prepares them for more challenging and rigorous coursework and academic programs.

Girls Who Code provides clubs hosted at Fairfax County regional libraries. Classes are taught by volunteers who work in the tech sector and meet for two hours a week for up to 10 weeks.

GRAND CHALLENGES FOR ENGINEERING

Fairfax students have participated in the Grand Challenges for Engineering challenges, which provide the framework to support the real-world connections that are emphasized through curriculum, work-based learning experiences, and site-based learning opportunities with business and community partners. Over 40% of the participants are Hispanic or African-American.

Fairfax County School System operates 25 secondary and high schools, including one Governor's school.

91% of FCPS students graduate on time (in four years of high school), and more than 92% plan to pursue post-secondary education. FCPS students can take Advanced Placement (AP) or International Baccalaureate (IB) classes in high school. FCPS's emphasis on STEM is seen throughout the district in its innovative programming. A few highlights include the following:

Cybersecurity and CyberPatriot	During the 2017-18 school year, cybersecurity courses are offered at four high schools offering the following coursework: • Cyber: Computer Systems Technology I and II (A+) • Cyber: Network Administration I and II (Net+) • Cyber: Database Design & Management I and II (Oracle) • Cyber: Routing & Switching 1A and 1B, Cisco • Cyber: Routing & Switching 2A and 2B, Cisco • Cyber: Security+ Capstone
Courses in Coding and Computer Science	Students at all high schools have access to at least one computer science offering, incorporating multiple pathways – Programming and Advanced Programming, Computer Science, AP Computer Science A, and IB Computer Science study programming in Java. A few schools are offering the new AP Computer Science Principles course, which offers a broader approach to CS and includes aspects of programming, abstractions, algorithms, large data sets, the Internet, cybersecurity concerns, and computing impacts. TJHSST and a few other high schools also have offerings above the level of AP CS, allowing students to pursue their study of CS throughout all four years of high school.

Fairfax County Public Schools: District performance

Year	ACT score	SAT				Graduation Rates	Matriculation to postsecondary institution
		SAT: Reading	SAT: Writing	SAT: Math	SAT: Total		
2017		595		592	1187	91%	-
2016		558	542	572	1672	92%	92%
2015		556	542	571	1669	93%	93%
2014		556	542	570	1668	93%	92%
2013		554	541	568	1663	91%	92%
2012		550	542	567	1659	91%	96%
2011		551	540	563	1654	91%	95%
2010		552	543	569	1664	90%	92%
2009		552	543	569	1664	86%	92%
2008		547	542	565	1654	85%	93%

Source: Graduation rates from Washington Area Boards of Education (WABE) for 2010-2017 (Virginia Department of Education data for 2008-2009); Graduates attending postsecondary institutions (WABE); SAT from WABE

Thomas Jefferson High for Science and Technology, is a Governor's magnet school located in Fairfax County and serves applicants from six different participating school districts: Arlington, Fairfax, Loudoun, and Prince William counties, as well as the cities of Fairfax and Falls Church. Established in 1985, the school is a partnership among businesses and schools created to improve education in science, mathematics, and technology. Representatives from business and industry and staff worked together in curriculum and facilities development for the school.

In 1999, local business leaders, parents, and alumni formed the TJ Partnership Fund (TJPF) as a nonprofit public foundation to help raise money to support TJHSST's academic mission and role as a STEM education leader. In 2017, TJHSST completed an extensive renovation. After the renovation, the TJPF expanded its focus to enhance STEM outreach efforts and alumni engagement in addition to its support for the school.

Attendance at the school is open to students in six local jurisdictions based on an admissions test, prior academic achievement, recommendations, and essays. 480 offers are made each year, with class enrollment averaging about 450. 13 science and technology research laboratories include: Astronomy and Astrophysics; Automation and Robotics; Biotechnology; Chemical Analysis and Nano-chemistry; Computer Systems; Engineering Design; Energy Systems; Microelectronics; Mobile & Web Application Development; Neuroscience; Oceanography/Geophysical Systems; Quantum Physics and Optics; Prototyping and Engineering Materials.

The foundation of the curricular program at TJHSST focuses on an interdisciplinary approach aimed at maximizing the full potential of each student's intellectual, technological, and affective skills. Coursework, such as the ninth grade IBET program and humanities courses, are driven by six learning methodologies:
- Acquiring powerful communication skills
- Developing collaborative skills
- Thinking and working in the context of systems
- Working with real projects and problems
- Managing change
- Developing an ethical culture

BEST HIGH SCHOOLS
USN #1
US News & World
Report Best HS
in Virginia

BEST HIGH SCHOOLS
USN RANK #6
US News & World
Report Best HS
in the US

BEST HIGH SCHOOLS
USN #2
US News & World
Report Best STEM
School in the US

Fairfax County Public Schools: Thomas Jefferson High for Science and Technology High School

Year	ACT score	SAT: Total	Graduation Rates	Matriculation to postsecondary institution*
2017	33.4	1499	100%	92%
2016	33.7	2234	100%	96%
2015	33.2	2216	99%	93%
2014	32.8	2219	100%	95%
2013	32.8	2228	100%	93%
2012		2223	100%	96%
2011			100%	96%
2010			100%	95%
2009			99%	96%
2008			100%	95%

Source: Fairfax County Public Schools

Langley High School opened in 1965 and is located in the northeast corner of Fairfax County, just across the Potomac River from Washington, D.C., in McLean, Virginia. The school's geographic attendance area, the largest in the district, encompasses residences on the border with Loudoun County as well as the community of McLean.

The school fits within a culturally diverse community that is home to many representatives of foreign countries. The school's location allows access to educational resources in both the nation's capital and the McLean community.

Langley offers one of the most comprehensive AP programs available, featuring more than 20 AP level classes in every discipline. Significant courses include the school's multivariable calculus and linear algebra classes, as well as the only Russian courses offered in a Fairfax County Public High School outside of Thomas Jefferson High School for Science and Technology.

BEST HIGH SCHOOLS
#3
US News & World Report Best HS in Virginia

BEST HIGH SCHOOLS
#180
US News & World Report Best HS in the US

BEST HIGH SCHOOLS
#223
US News & World Report Best STEM School in the US

Fairfax County Public Schools: Langley High School

Year	ACT score	SAT: Total	Graduation Rates	Matriculation to postsecondary institution*
2017	28.2	1305	99%	84%
2016	27.4	1890	98%	91%
2015	27.2	1850	98%	91%
2014	26.7	1865	98%	91%
2013	27.4	1876	98%	91%
2012		1847	99%	91%
2011			99%	91%
2010			98%	90%
2009			98%	91%
2008			99%	92%

Source: Fairfax County Public Schools

MARSHALL ACADEMY
A Governor's STEM Academy

George C. Marshall High School serves a cosmopolitan area of Fairfax County located near Tysons Corner, twelve miles west of Washington, D.C. Students that attend Marshall are a reflection of the great ethnic diversity in Northern Virginia. George C. Marshall High School prides itself on its strong academic programs. Over 100 faculty members offer a comprehensive curriculum that stresses academic courses as well as studies in fine arts and technical fields. Since 1997, Marshall has offered both the International Baccalaureate (IB) Diploma and individual courses for IB Certificates. Over this period, the diploma achievement rate has been 94%.

Marshall's comparatively modest size allows numerous opportunities for students to participate and develop leadership skills in a comprehensive extracurricular program. The Marshall Academy provides extensive science, business, marketing, and technology classes to juniors and seniors.

BEST HIGH SCHOOLS USNWR #13
US News & World Report Best HS in Virginia

BEST HIGH SCHOOLS USNWR RANK #180
US News & World Report Best HS in the US

Business Partnerships

CIT CENTER FOR INNOVATIVE TECHNOLOGY · CISCO · Junior Achievement of Greater Washington · WANADA · NORTHROP GRUMMAN

Jill's HOUSE Celebrating special children. Renewing their families. · GEORGE MASON UNIVERSITY · TYSONS REGIONAL CHAMBER OF COMMERCE · SYSTEMIC SOLUTIONS NORTHERN VIRGINIA COMMUNITY COLLEGE · Copper River Information Technology

CHANTILLY Academy

Chantilly High School, located in rapidly expanding western Fairfax County, features many opportunities for student achievement and involvement. The school enjoys strong community support, and the scholastic program accommodates a wide range of curricular and co-curricular activities.

The school offers several comprehensive STEM opportunities for interested students, Chantilly Academy and Chantilly Governor's STEM Academy. The program focuses on engineering and technology and cybersecurity, serving 1,500 student in grades 9-12. There are no application or acceptance requirements.

Students have the opportunity to take high-value specialized college and career-oriented electives specifically in the area of high-demand STEM fields to include engineering and scientific technology, health and human services, and other technical programs. Students gain professional experience, verified credit, professional licensure, industry certifications, internships, and earn college credits through dual-enrollment agreements with James Madison University, Northern Virginia Community College (NOVA), Shenandoah University, and articulated credits with George Mason University – Volgenau School of Engineering.

The Chantilly Governor's STEM Academy is the largest of six FCPS high school academies and is an embedded magnet academy for student enrollment from nineteen schools in the FCPS division.

BEST HIGH SCHOOLS USN #14
US News & World Report Best HS in Virginia

BEST HIGH SCHOOLS USN RANK #467
US News & World Report Best HS in the US

BEST HIGH SCHOOLS USN #171
US News & World Report Best STEM School in the US

Business Partnerships

Fairfax County Public Schools: Chantilly High School				
Year	ACT score	SAT: Total	Graduation Rates	Matriculation to postsecondary institution*
2017	27	1237	97%	80%
2016	25.9	1721	97%	84%
2015	25.9	1728	97%	89%
2014	24.9	1710	97%	87%
2013	24.6	1678	97%	87%
2012		1688	96%	89%
2011			97%	84%
2010			96%	84%
2009			95%	88%
2008			95%	85%
* Percent enrolling in college at any time within the first 2 years after graduating high school				
Source: Fairfax County Public Schools				

Located four miles from Washington, D.C., and tucked into the northeastern section of Fairfax County, McLean High School provides a supportive environment for the whole student—focusing on student achievement, while encouraging participation in sports, the arts, clubs, publications, and other co-curricular activities.

McLean offers an academically challenging program with courses designed to complement the broad interests and abilities of a culturally diverse student body. Because of the strong academic orientation of the McLean community, the curriculum focuses on college preparation with an impressive array of advanced placement courses, while offering a wide variety of electives designed to appeal to all interests and vocations. Electives offerings include everything from an award-winning fine and performing arts program, with orchestral, choral, and instrumental levels suitable for the beginner or the expert performer to a preschool program in our early childhood education classes.

BEST HIGH SCHOOLS USN #2
US News & World Report Best HS in Virginia

BEST HIGH SCHOOLS USN #153
US News & World Report Best HS in the US

BEST HIGH SCHOOLS USN #248
US News & World Report Best STEM School in the US

Business Partnerships

GREATER MCLEAN CHAMBER of COMMERCE

Rotary Club of McLean

Safe Community Coalition

VIRGINIA HERITAGE BANK

VINSON HALL RETIREMENT COMMUNITY

Chain Bridge Bank

Hidden Creek COUNTRY CLUB

MARYMOUNT UNIVERSITY

MILE YOUTH LACROSSE

Fairfax County Public Schools: McLean High School				
Year	ACT score	SAT: Total	Graduation Rates	Matriculation to postsecondary institution*
2017	27.8	1296	97%	80%
2016	27.8	1869	97%	87%
2015	27.3	1852	98%	87%
2014	26.6	1819	97%	86%
2013	27	1823	98%	87%
2012		1791	95%	87%
2011			96%	80%
2010			96%	84%
2009			95%	85%
2008			96%	84%

Source: Fairfax County Public Schools

Oakton High School, located in Vienna near Interstate 66, serves an area of Fairfax County that extends from the City of Fairfax to the Town of Herndon. Oakton is a comprehensive high school and an interdisciplinary community of learners that prioritizes reflective and authentic 21st-century learning experiences. Starting with freshman year and culminating with the senior Capstone project, Oakton students set learning goals and reflect on their acquisition of real-world, interdisciplinary skills. In the spring, students present their work to the community at an Exhibition of Learning and to the faculty through a final Presentation of Learning.

Oakton features a wide variety of AP courses, the AVID program, and many elective classes including psychology, fine arts, engineering, accounting, and several world languages. Classes and programs are tailored to meet the specific educational needs and interests of all students. Oakton students can give and receive extra help at The Center, a professional student-run center where students receive friendly, quality assistance on writing and thinking for all classes and levels from trained peer tutors. In addition, Cougar Time and Student Advisory provide students frequent opportunities to work closely with teachers outside of their regular class periods.

Beyond its strong academic program, Oakton recognizes the importance of extracurricular and co-curricular programs to foster the growth of its students. Accordingly, Oakton offers a long and varied menu of options for students. The Performing Arts Department, comprised of band, chorus, and theatre arts, consistently earns distinction as one of the premier performing arts programs in the area. Oakton Media Group produces a newspaper, The Outlook; a yearbook, Paragon; and a literary magazine, Opus; which have consistently earned national recognition for excellence. Oakton's athletic program is highly competitive and enjoys a reputation for athletic distinction and outstanding sportsmanship.

BEST
HIGH SCHOOLS
USN **#4**
**US News & World
Report Best HS
in Virginia**

BEST
HIGH SCHOOLS
USN RANK **#198**
**US News & World
Report Best HS
in the US**

Fairfax County Public Schools: Oakton High School				
Year	ACT score	SAT: Total	Graduation Rates	Matriculation to postsecondary institution*
2017	27.2	1237	98%	80%
2016	26.9	1790	97%	89%
2015	27.1	1792	97%	90%
2014	26.5	1802	97%	92%
2013	26.2	1801	97%	89%
2012		1796	97%	92%
2011			96%	93%
2010			97%	90%
2009			96%	88%
2008			96%	89%

Source: Fairfax County Public Schools

Woodson High School serves an area of Fairfax County beginning to the east of downtown Fairfax and extending east to I-495. A comprehensive high school, Woodson offers a diverse array of AP courses and electives in the fine and performing arts, career and technical education, and other academic subjects. Extracurricular and co-curricular programs thrive at Woodson. Students are encouraged to join one or more of the school's accomplished athletic teams, academic competition teams, or clubs, which are dedicated to interests ranging from computer science and robotics to orchestra and poetry. The school also encourages and provides a number of service learning opportunities, through which students engage in authentic and meaningful community service to make connections between the classroom and the community.

BEST
HIGH SCHOOLS
#5
US News & World
Report Best HS
in Virginia

BEST
HIGH SCHOOLS
RANK **#205**
US News & World
Report Best HS
in the US

Year	ACT score	SAT: Total	Graduation Rates	Matriculation to postsecondary institution*
Fairfax County Public Schools: Woodson High School				
2017	27.0	1244	97%	81%
2016	26.9	1785	98%	84%
2015	26.7	1810	98%	89%
2014	25.9	1798	97%	88%
2013	26.4	1830	97%	90%
2012		1802	95%	90%
2011			96%	86%
2010			96%	86%
2009			96%	90%
2008			95%	91%

Source: Fairfax County Public Schools

At South County High School, students have opportunity and access to academic challenge in every major discipline through our regular, Honors, and Advanced Placement courses. South County recognizes the importance of students successfully transitioning from high school to a wide range of post-secondary activities, including employment, military, career, and technical studies, as well as community and four-year colleges and universities.

Many South County students are engaged with organizations in the surrounding community, as well. Fort Belvoir Community Hospital, the Lorton Community Action Center, and the Workhouse Arts Center are recent examples of organizations that students have engaged for volunteer and other experiences.

BEST HIGH SCHOOLS **#23**
US News & World
Report Best HS
in Virginia

BEST HIGH SCHOOLS **#728**
US News & World
Report Best HS
in the US

Fairfax County Public Schools: South County High School

Year	ACT score	SAT: Total	Graduation Rates	Matriculation to postsecondary institution*
2017	24.5	1151	98%	77%
2016	24	1634	98%	84%
2015	25	1615	97%	85%
2014	23.4	1652	98%	85%
2013	23.2	1638	97%	87%
2012		1648	97%	83%
2011			96%	83%
2010			95%	86%
2009			94%	87%
2008			94%	87%

Source: Fairfax County Public Schools

Business Partnerships

Lorton Community
Action Center

Workhouse
ARTS CENTER

B3.b. Briefly describe capital improvement plan, timetable and plan of finance for school system and other significant program providers. Include capital investment in public schools over the last ten years. Also, include information on charter and magnet schools.

High-quality facilities for high-quality education.

FCPS has 26 million square feet of school buildings and office space, including 151 Energy Star certified schools (more than any other school system in the country). Each year, FCPS develops a five-year planning document known as the Capital Improvement Program (CIP) to address future facility needs. The CIP assesses requirements for new construction, capacity enhancements, renovations, and site acquisition.

Actual completion dates for CIP projects depend on cash flow and debt service limitations established by the Fairfax County Board of Supervisors. FCPS has a strong history of gaining overwhelming approval for its public investment in capital initiatives. In fact, over the past 10 years, the school division has grown by approximately 20,000 students with strong support from the community for meeting this demand.

Historical funded capital investment in Fairfax County Public Schools
$ Millions

Fiscal Year	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018
$ Millions	262	213	163	166	267	225	328	274	337	176	201

Source: FCPS public documents

FCPS has more than 20 gifted and talented centers at the elementary school level, 10 language immersion elementary centers; advanced academics at 13 of our middle schools; seven High School International Baccalaureate Program offerings and 18 Advanced Placement program offering High Schools.

B3.c. Describe how education programs are funded at the municipal, county and state levels in your community as well as how and where community and private funding can be allocated.

Fairfax residents value public education.

The FCPS $2.8 billion budget is primarily funded by Fairfax County (70.1%) with contributions from Virginia (23.1%), other sources (6.8%), and the federal government (1.6%). More than 85% of the budget goes toward instruction, and the average cost per student is $14,767.

B3.d. State assessment results by performance level (basic, proficient and advanced), including (i) two-year trend data for each subject and grade tested and (ii) a comparison between annual objectives and actual performance for each student group.

Student success by the numbers.

Fairfax County Public Schools		2015-2016		2016-2017	
		Pass Rate	Advanced Pass	Pass Rate	Advanced Pass
English: Reading	Grade-3 English Reading	81	23	79	25
	Grade-4 English Reading	80	25	81	26
	Grade-5 English Reading	85	35	84	32
	Grade-6 English Reading	85	32	86	33
	Grade-7 English Reading	88	26	87	27
	Grade-8 English Reading	84	23	83	24
	Grade 9-12 EOC English Reading	93	17	92	15
English: Writing	Grade-8 Writing	81	30	82	36
	Grade 9-12 EOC Writing	90	42	90	41
History & Social Sciences	Grade 9-12 Civics & Econ	92	45	93	44
	Grade 9-12 Geography	0	0	0	0
	Grade 9-12 VA & US History	91	24	91	25
	Grade 9-12 VA Studies	88	48	90	48
	Grade 9-12 World History I	90	29	90	28
	Grade 9-12 World History II	89	31	88	34
Mathematics	Grade-3 Mathematics	78	24	76	22
	Grade-4 Mathematics	83	33	83	35
	Grade-5 Mathematics	76	19	74	18
	Grade-6 Mathematics	90	26	89	24
	Grade-7 Mathematics	82	28	81	29
	Grade-8 Mathematics	82	19	82	20
	Grade 9-12 Algebra I	87	20	87	20
	Grade 9-12 Algebra II	86	33	88	37
	Grade 9-12 Geometry	85	26	83	25
Science	Grade-5 Science	82	29	80	25
	Grade-8 Science	85	21	84	19
	Grade 9-12 Biology	88	24	87	24
	Grade 9-12 Chemistry	86	23	88	28

Fairfax County Public Schools				
	2015-2016		2016-2017	
Subject	Pass Rate	Benchmark	Pass Rate	Benchmark
English: Reading and Writing	85	75	85	75
History & Social Sciences	90	70	90	70
Mathematics	83	70	83	70
Science	86	70	85	70

Talent | Education | Primary, Secondary Education
B3.e. Primary and secondary school rankings at the state/national level as well as a "scatter map."

See map in the introduction to this section.

B3.f. Special needs and alternative education programs (including programs currently in place, student/teacher ratios in those programs, and success measures for those programs).

No child is left behind.

FCPS provides an array of services, schools, and programs designed to meet the students' alternative education needs. These include:

Program	Details
Special Education Services	FCPS serves 26,000 students with disabilities in 198 schools, including seven special education centers. Services are provided along a continuum with an emphasis on educating students within their neighborhood school. Special education and related services are provided to qualified students with disabilities from age 2-22, according to the Individuals with Disabilities Education Act and the Regulations Governing Special Education Programs in Virginia. FCPS offers a Parent Resource Center that provides parent and teacher training and resources.
Alternative high schools	Two alternative high schools are available for students in grades 9-12 and ages 17-22. These schools offer programs designed to help students who may need a smaller school environment to thrive personally and academically, or whose life circumstances could result, or have resulted, in an interruption of their education or in their dropping out of school.
Non-traditional programs	Alternative Learning Centers are designed to provide educational services for students in grades K-10 who are experiencing behavioral challenges, academic difficulties, or students who simply require a non-traditional learning environment. Out-of-school instructional services are available for students who are unable to come to school due to a medical or psychiatric illness (homebound instruction), or disciplinary action.
Private schools for specialized education	10 private day schools in Fairfax County are licensed by the Commonwealth of Virginia to provide special educational services. Most of these schools are accredited by the Virginia Association of Independent Specialized Education Facilities (VAISEF), an association of Virginia private providers of specialized education and services for children and youth with special needs, and their families.

High achievers are continually challenged.

FCPS offers a continuum of advanced academic services available to all students from kindergarten through grade twelve.

The continuum provides increasing levels of challenge and is designed to emphasize matching services to student needs with flexible entry points. All children have the opportunity to work at a level of challenge that promotes continuous intellectual growth. Challenging and engaging programs for advanced learning include Advanced Placement, International Baccalaureate, two elementary magnet schools for the Arts and Sciences, and high school academies.

In primary school, programs like the FCPS Young Scholars finds and nurtures advanced academic potential in students from historically underrepresented populations.

Early identification of these students provides them with opportunities to work with advanced curriculum so they are prepared to participate in advanced-level coursework at the elementary and secondary school levels. The FCPS Young Scholars model has received national recognition in addressing the issue of underrepresentation in advanced academics. A 2017 Hanover Research report, *Best Practices in Gifted Programming*, noted Young Scholars as an exemplary model that is being replicated in other school districts in the U.S.

FCPS's high school academies within existing high schools offer advanced technical and specialized courses that successfully integrate career and academic preparation.

Each academy emphasizes instruction in one or more career pathways through unique programming and coursework. Four of the six high school academies have received the VDOE designation as a Governor's Academy. Each Governor's Academy is a partnership among school divisions, postsecondary institutions, and business and industry. In collaboration with a CTE advisory council and through the review of workforce trends data and student interest data, course offerings at high school academies are continually evaluated to ensure they reflect industry demand as well as connect academic knowledge with technical applications. Current areas of focus for new coursework and work-based learning opportunities include cybersecurity, information technology, and health and medical sciences. A new Health Informatics and Patient Care Technician program is being developed in collaboration with INOVA and through a grant from the Claude Moore Foundation.

Talent | Education | Primary, Secondary Education
B3.h. Foreign language schools in your community
B3.h.(i). Languages offered

Languages Offered Elementary Through High School

Chinese   French   German   Latin   Spanish

Arabic   American Sign Language   Japanese   Korean   Russian

Vietnamese   Italian

Immersion programs speed learning.

FCPS offers 17 immersion programs. Students enrolled in immersion programs spend at least half of the day studying the regular grade-level curriculum in classes conducted in the world language. The other half of the day is conducted in English. In FCPS, mathematics, science, and health are taught in the target language (French, German, Japanese, Korean, or Spanish). Students receive instruction in English for language arts and social studies during the other half of the day.

Program	Details
World Language (or One-Way Immersion) Program Model	World Languages Immersion program classes are predominantly composed of students learning the target language. Fairfax County Public School elementary students are able to learn French, German, Japanese, Korean, and Spanish at seven elementary schools through the world language immersion program beginning in kindergarten or first grade. Admission is granted via a lottery process.
Two-Way Immersion Program	Two-Way Immersion program classes balance speakers and learners of the target language. Both student populations serve as peer language models during the respective language portion of the day to mutually benefit each group's language acquisition process. Fairfax County Public School elementary students are able to learn Spanish and Korean at 10 elementary schools through the two-way immersion program beginning in kindergarten. Admission is granted via a lottery process.
Foreign Language in the Elementary School/Language through Content (FLES/LTC) Programs	Additional early language learning opportunities are also available to FCPS elementary students at 55 schools by way of FLES/LTC programs. In FLES/LTC programs students learn a world language through Science and STEAM (Science, Technology, Engineering, the Arts, and Mathematics) integrated content. The program provides language learning opportunities to all students in an elementary school from grades K through 6th.

Special attention for our new arrivals.

FCPS supports immigrating students and families through resources and programs designed to assist their cultural assimilation, including:

Program	Details
Bilingual community liaisons	Support student registrars by providing families with information about school and community services offered in Fairfax County. Community liaisons also help parents fill out forms and complete applications for free and reduced-price meals, recreation programs, health insurance, adult education classes, job training, and other programs. Families new to FCPS can attend Getting to Know Fairfax County Public Schools, a parent orientation that ensures a smooth transition to the FCPS community.
Immigrant Family Reunification Program (IFRP)	One effort by Fairfax County Public Schools is to identify immigrant students going through family reunification, and to invite their parents to participate in parenting education classes and take advantage of free resources such as Families Reunite, a nine-hour curriculum for parents reunifying with their children. The final class session includes the children. Parents and children complete activities together.

Taking STEM one step further.

FCPS is committed to ensuring that its students receive the best STEM experience possible. To that end, it has invested time, resources, and energy in building world-class partnerships to enhance the experiences for both teachers and students.

Enhancing teacher effectiveness.

The STEAM Project team collaborates with EdLeader21 and the Carnegie Foundation for the Advancement of Teaching to incorporate research-based improvement science in FCPS practices as much of the STEAM Project work revolves around innovation and change. As part of a national Networked Improvement Community (NIC) that includes four school districts from around the country, FCPS will create 100 STEM sixth-grade classrooms by May 2018. This collaborative NIC will create a model for STEM expansion in additional FCPS elementary school classrooms.

FCPS has also partnered with Code.org to offer professional learning on K-5 coding to teachers. FCPS also partnered with the U.S. Naval Academy to provide STEM professional learning sessions that included coding, computer science, and conditional statements. We continue to seek grant funded opportunities and partnerships that will increase the number of teachers who are trained and prepared to teach coding and computer science across the grade levels.

Expanding summer enrichment opportunities.

FCPS continues to expand K-12 summer enrichment opportunities in areas such as robotics, cybersecurity, aerospace, and sustainable energy. STEM Camp, a centrally located camp for students in grades three through five, gives students the opportunity to explore three-dimensional design and printing, aerospace, robotics, and energy. In collaboration with SySTEMic Solutions, a partnership with Northern Virginia Community College, FCPS offers summer programming and enrichment opportunities in VEX robotics and cybersecurity. Additional summer opportunities are provided through the Reston YMCA Summer Camps, where kids ages 6-12 can participate in specialty camps such as LEGO Robotics, Mad Scientists, and Art Meets Science.

B4.b. Describe whether your current STEM programs are selective (i.e., criteria to gain enrollment and they are not in regular K-12 schools), inclusive (anyone can enroll but separate from regular K-12 schools), or comprehensive (included in regular K-12 schools).

STEM exposure extends beyond schools.

A significant number of STEM opportunities are comprehensive and have no fees or out-of-pocket charges to families to participate, such as Neighborhood and Community Services Computer Clubhouses, Fairfax County Public Libraries, Fairfax County Public School Academies, and FCPS STEM courses and certifications. An exception is Thomas Jefferson High School for Science and Technology, which is free but has a very competitive enrollment process.

Most STEM camps and private enrichment classes in our community are fee-based but inclusive—all are able to enroll.

Last, initial participation in some competitive STEM programs (science fairs or robotics clubs) may not require fees, but subsequent rounds can present significant costs. Many of these programs seek sponsorships and/or require fundraising.

B4.c. Describe the curriculum offered, how it is determined, how often it is reviewed and how long it takes to change the curriculum.

Updating curriculum keeps students ahead.

The FCPS curriculum seeks to ensure that students develop both the knowledge and the skills necessary to be successful 21st-century citizens. The content knowledge is defined in the FCPS Programs of Studies, which are aligned to the Virginia Standards of Learning. The state adopts new standards for K-12 content areas on a seven-year cycle and this leads to FCPS curriculum updates.

Curriculum resources are then selected to align to the objectives and ensure the learning needs of all students will be met, including the needs of advanced learners, English Learners, and students identified for Special Education services. Student achievement is continuously monitored so that resources may be revised/created on an ongoing basis.

Looking beyond just content knowledge, FCPS adopted the Portrait of a Graduate in 2014.

This framework articulates the attributes students will need to obtain to be successful: Communicator, Collaborator, Ethical and Global Citizen, Creative and Critical Thinker, and Goal-Directed and Resilient Individual. These skills are built over time through opportunities for all students to learn content through meaningful learning opportunities.

B4.d. Other student achievement indicators for STEM programs/participants to which you would like to call our attention.
B4.e. Plans for next five to ten years for STEM programs (to the extent not discussed in subsection A above).

STEM will continue to branch out.

Educators constantly examine how to improve education for all students at every level in Fairfax County and Northern Virginia.

As part of a national Networked Improvement Community that includes four school districts from around the country, FCPS will create 100 STEM sixth-grade classrooms by May 2018. This will create a model for STEM expansion in additional FCPS elementary school classrooms.

From their first day in Fairfax County, families will find ample opportunity for children to experience the wonders of science and technology.

The Fairfax County Public Library's 22 branches offer more than 60 programs for toddlers and preschoolers. Public preschool options, which include the statewide Virginia Preschool Initiative and Head Start programs, ensure a strong foundation for every child.

The Fairfax County Public School System—the 10th-largest in the country—immerses students in a school culture that prepares graduates to become excellent communicators, collaborators, critical thinkers, global citizens, and goal-oriented, resilient learners.

These skills begin in elementary school, where students participate in STEAM labs and learn about the engineering design process. A collaboration with the Carnegie Foundation for the Advancement of Teaching ensures that not only is the STEM curriculum cutting edge but that teachers are equipped to deliver a top-notch instructional program.

As a child enters middle school, the Coding and Innovative Technology program opens new horizons and a structured opportunity to deeply explore the tech world. These opportunities continue to unfold in high school, where each Fairfax County school has access to computer science offerings such as AP and IB computer science classes.

Four schools will begin offering cybersecurity classes in 2018-19. At Thomas Jefferson High School for Science and Technology, computer science offerings extend beyond the AP level. These opportunities and others create one of the most rigorous high school experiences available anywhere in the nation. Each of the county's 24 high schools has been rated among the most demanding public schools in the U.S., according to the 2016 Washington Post list of top high schools.

The end result is that from birth through graduation, Fairfax County students are nurtured and prepared, not only for college, but for real-life opportunities thanks to innovation and outstanding educators with continual access to world-class resources.

Loudoun County Public Schools

K-12 Education within 5 Miles of Innovation Station

Innovation Station

5 Miles from Innovation Station

Washington Dulles International Airport

Schools
- High
- Middle
- Elementary

0   2 Mi

In Virginia

Loudoun County Schools

Broad Run High*
Countryside Elementary
Discovery Elementary
Dominion High*
Dominion Trail Elementary
Farmwell Station Middle*
Forest Grove Elementary
Guilford Elementary
Meadowland Elementary
Moorefield Station Elementary
Park View High

Potowmack Elementary
Rock Ridge High
Rolling Ridge Elementary
Rosa Lee Carter Elementary*
Seneca Ridge Middle
Sterling Elementary
Sterling Middle
Steuart W. Weller Elementary
Stone Hill Middle
Sugarland Elementary
Sully Elementary

Fairfax County Schools

Aldrin Elementary
Armstrong Elementary
Carson Middle*
Clearview Elementary
Coates Elementary
Crossfield Elementary*
Dogwood Elementary
Dranesville Elementary
Floris Elementary*
Forest Edge Elementary
Forestville Elementary*
Fox Mill Elementary*

Franklin Middle*
Herndon Elementary
Herndon High
Herndon Middle
Hughes Middle
Hunters Woods Elementary*
Hutchison Elementary
Lake Anne Elementary
McNair Elementary
Oak Hill Elementary*
South Lakes High
Terraset Elementary

* Top Ranked Virginia Schools

Talent | Education

B2. Describe the educational system (from pre-K to 12 and graduate level) in high-level terms. Focus on their integration and cooperation as well as responsiveness to employer needs. If those areas are lacking, describe how your community proposes to address those deficiencies. Provide a map of each school within a 5-mile radius of each proposed real estate site.

Loudoun County Public Schools (LCPS) is the third-largest school division in the Commonwealth of Virginia. With the goal to develop knowledgeable critical thinkers, collaborators, communicators, creators, and contributors, LCPS serves more than 80,700 students in 90 facilities (the Academy of Science currently meets at Dominion High School while the Academies of Loudoun facility is under construction). These aspiring scientists, teachers, and business leaders attend any one of the 15 high schools, 16 middle schools, 57 elementary schools, and four special purpose schools (Academy of Engineering and Technology, Academy of Science, C.S. Monroe Technology Center, and Douglass School) located throughout the county.

LCPS has been recognized as a 2017 Best School District in America by Niche. In 2017, LCPS has 40 National Merit Semifinalists. The LCPS Class of 2017 had an on-time graduation rate of 95.5% and earned more than $54.7 million in scholarships.

The Loudoun School-Business Partnership, steered by an Executive Council of business community leaders and education authorities, establishes creative partnerships between Loudoun County Public Schools and local businesses towards student professional development, curriculum applicability, and community service.

One such partnership is with TEALS (Technology Education and Literacy in Schools), of which Loudoun County is the largest and most active school system participant. Supported by Microsoft Philanthropies, TEALS pairs trained computer science professionals from across the technology industry with classroom teachers to team-teach computer science, ensuring real-world applicability of technical teaching practices.

In addition to ensuring teachers have access to the best teaching practices, LCPS is committed to partnering to provide its students with real-world professional experiences.

Through computer science internships with the likes of Telos, Howard Hughes Medical Institute's Janelia Research Campus, and Northrop Grumman, LCPS's aspiring computer scientists and researchers have access to high-quality teaching, curricula, and internship experiences preparing them to be leaders in their future fields.

B2. Describe early childhood education programs in your community, especially those focusing on STEM initiatives. Be specific in your description, including name and distance to proposed real estate sites.

Loudoun County uses play as the foundation for academic learning for its youngest residents.

Our students learn to view themselves as explorers, problem-solvers, and inventors. We have many options for early childhood education through our public schools, libraries, community centers, and private facilities. A few programs are highlighted below:

Program	Details
Early Childhood Special Education Program (multiple locations)	Provides a strong, play-based, developmental curriculum. The philosophy of the classroom is "children learn best by doing." Learning is not just repeating what someone else says; it requires active thinking and experimenting to find out how things work and to learn first-hand about the world in which we live.
Learning Through Making	Program that turns young students into content producers to share their understanding with the world. They must sort, classify, and organize content to find the best way to "teach" it to others. In the meantime, they become content experts.
YMCA Early Learning Program	Offering full and half-day licensed programs to children ages 6 weeks to 5 years, Early Learning Centers' curriculum includes creative learning, healthy habits, music & movement, writing & literacy, reading readiness, arts & crafts, computers, socially conscious habits, STEM, and more.

The broader Loudoun community is also very committed to developing the next generation of scientists, engineers, and doctors, offering a broad array of STEM learning experiences to the community.

A few highlights hosted by the Loudoun County Parks and Recreation follow:

Program	Details
Creative Curriculum for Preschoolers	Programs offered include Creative Arts, Math and Manipulatives, Sensory Wet and Dry, Block Building, Music and Movement, and Science and Discovery
Little Scientists	Offered on the third Wednesday of the month. Science projects and hands on activities will be explored with friends. This class will allow your little one to explore the world of science with a different experiment each week
STEM Parents Night Out	Head out for a night on the town while we take care of the little ones. Each month will have its own open-ended engineering project for the kids to tackle. They'll also have pizza, play games, watch a movie, and enjoy some moonbounce time.
Playing with Math	An instructor leads participants through dramatic play scenarios that incorporate math skills such as number concepts, comparing, measuring, and patterning.
Gearbots	Early Students learn basic engineering using LEGO® Educational Materials that incorporate motors, sensors, gears, pulleys, axles, and a simple linear block programming software to animate LEGO robots, including smart spinners, roaring lion, and play soccer.

Loudoun is also home to a number of high-quality private options for your young learners.

A brief overview of a few options include:

Program	Details
Ashburn Village Country Day School	Computer Science program as part of the standard curriculum. The program is attended by the Preschool 3's through school-age children. We have a dedicated computer science room with ten PCs to accommodate each child with a workstation.
Chesterbrook Academy	Beginning in kindergarten, our students' experience STEM through challenging and fun projects that encourage problem solving, decision making, and innovation. In addition, we offer a LEGO® engineering elective for our middle school students. Our technology-rich environment aids in the development of 21st-century skills and also helps us customize each child's learning. We provide students in fourth through eighth grade with their own iPad® to interactively engage with content and easily access information. In addition, our innovation lab is fully outfitted with Arduino®, Robot® and Osmo technology.
Golden Pond School	At Golden Pond School, we have chosen to link our students' first steps into literacy with the exploration of the world around them, as reflected through children's literature. Our hands-on, science-based activities are built upon the theme-related books that our children are enjoying. On any given day, after reading stimulating and thought provoking classic children's literature, our students can be found: discovering how chicks hatch, taking rain walks, painting with ice cubes, mixing red and yellow to make the perfect orange, planting pumpkins, constructing weathervanes, exploring the metamorphosis of ladybugs, taking spider walks, and going on worm hunts.
Countryside Children's Academy	Preschool curriculum for this age group is structured to support the individual challenges our four-year-olds seek, within a supportive and enabling group learning environment. Our STEAM curriculum for Pre-K students at age four contains these key areas that we address: science, magnets, seasons and the weather, weight and balance, observations, texture and sensory, construction, animals, shapes, nature, plants and trees, and the human body.

Talent | Education | Primary, Secondary Education

B3.a.(i) Average ACT and SAT scores (provide average math, science, verbal, and total, as possible) for each of the past ten years.

B3.a.(ii) Graduation rates for the past ten years

B3.a.(iii) Percentage of graduates by gender and race/ethnicity matriculating to (please include for all programs and specifically for STEM programs):

1. Four-year colleges or universities
2. Two-year colleges or universities
3. Vocational and technical schools and programs

Loudoun County's reputable primary schools employ experiential learning at all levels.

Students often collaborate in mixed-grade groups on technology projects and STEM presentations. The primary schools also offer special education (disabled), gifted/talented education, English as a second language (ESL), and programs for at-risk youth. The Loudoun County Public School system has 57 elementary schools that each accommodate 400 to 800 students.

Liberty Elementary is seen as a leader in STEM education in Loudoun County and Northern Virginia. Liberty Elementary was recognized as a National STEM Excellence School at the Future Education in Technology Conference. In 2016, the school introduced the "Smart Lab," which is a co-taught digital learning environment for teachers and students. Liberty began its STEM initiative in 2010 and the program has grown into a model. Liberty partners with Northern Virginia Community College for Loudoun County STEM Day. The school partners with local businesses and Statistical LLC, led by John Hovell, a parent and driving force in the STEM focus at Liberty.

Liberty teachers provide staff development to other Loudoun elementary schools and present on the subject at state and national conferences. They also offer many extra-curricular activities including: STEMmerweek, Camp Code, Camp Create and Camp Construct. Liberty's focus on design, collaboration and authentic problem solving prepares students to become successful leaders in our ever-changing community and world.

Loudoun's primary school students receive top-notch STEM preparation and some, like in the case of Floodie, are already making their marks on society!

Highlight	Details	
Floodie	As our students continue to invent and make, we will continue to see our patent list grow. A team of eight students from Lunsford Middle School invented and patented a lifesaving device called the "Floodie."	
STEM Camp	Each year, the invite-only camp for Sterling elementary schools that incorporates the latest tech-savvy learning tools. Young scientists and engineers complete laboratory investigations. Each investigation requires the use of scientific methods, technology, design and engineering of new tools, calculating, and reporting the results	
Coding	LCPS has partnered with Code to the Future to provide three schools with a supported Computer Science Immersion Program for three years beginning the 2017-18 school year. The three schools will conduct "Epic Builds" throughout the year. These are special events designed to showcase the students' coding skills.	

The goal of STEM education at LCPS is to deepen students' knowledge, skills, and habits of mind that characterize science, technology, engineering, and mathematics.

Loudoun County Public Schools has many exemplary programs designed to answer the call for STEM education. The Loudoun Governor's Career and Technical Academy at Monroe Technology Center and the Academy of Science at Dominion High School are specialized programs that meet these goals. Additionally, LCPS offers students a variety of STEM courses and opportunities that are rigorous, demanding, and help students develop skills required for the 21st century. These academies will merge to form one STEM academy in the Fall of 2018.

Based on the success of these programs, LCPS is building capacity to provide integrated STEM education to all LCPS students. Within its integrated STEM framework, LCPS science courses will develop student's science understanding necessary to be scientifically literate, which includes science content, habits of mind, science process skills, and relevant application of scientific knowledge.

Loudoun County is home to 15 high schools, all of which are accredited and six of which are nationally ranked by U.S. World News and World Report.

Loudoun County strives to meet the specific needs of every child and has four special purpose schools (Academy of Engineering and Technology, Academy of Science, C.S. Monroe Technology Center, and Douglass School) to support this mission. LCPS are not only highly regarded, but also have high student outcomes year over year.

Standardized college test scores are competitive with an average SAT score of 1155 and a composite ACT score of 24.8. In 2017, LCPS had 40 National Merit Semifinalists. The LCPS Class of 2017 had an on-time graduation rate of 95.5% and earned more than $54.7 million in scholarships.

Loudoun County Public Schools: District performance

Year	SAT: Total	Graduation Rates	Matriculation to postsecondary institution
2017	1155	100%	96%
2016	1617	96%	92%
2015	1612	96%	93%
2014	1612	95%	93%
2013	1606	95%	93%
2012	1590	95%	92%
2011	1592	94%	93%
2010	1597	94%	93%
2009	1593	98%	93%
2008	1575	98%	93%

Source: Graduation rates from Washington Area Boards of Education (WABE) for 2010-2017 (Virginia Department of Education data for 2008-2009); Graduates attending postsecondary institutions (WABE); SAT from WABE

Briar Woods High School, just 8.3 miles from the Innovation Station site, ranks 9th in Virginia. At Briar Woods High, 98% of students graduate and 74% take Advanced Placement courses. Briar Woods is committed to preparing students for their future career paths. To accomplish this, Briar Woods has a number of skill-based course sequences. For example, students interested in construction, product development, or building their own inventions, the Production sequence takes students through materials to manufacturing. Additional course sequences cover computer-aided drafting and design, technology and engineering, and aerospace science.

BEST HIGH SCHOOLS #9
US News & World
Report Best HS
in Virginia

BEST HIGH SCHOOLS #327
US News & World
Report Best HS
in the US

Loudoun County Public Schools: Briar Woods High School			
Year	SAT: Total	Graduation Rates	Matriculation to postsecondary institution
2017	1176	98%	
2016	1109	98%	
2015	1102	98%	90%
2014	1093	98%	91%
2013	1088	98%	
2012	1083	98%	
2011	1079	97%	
2010	1062	97%	
Source: Loudoun County Public Schools			

Broad Run High School, just seven miles from the Innovation Station site, ranks 20th in Virginia. At Broad Run High School, 98% of students graduate and 63% of students take Advanced Placement courses. Broad Run has no shortage of opportunities for students interested in gaining hands-on experience in the STEM field. Broad Run sends students every year in competitions to build hovercrafts, helicopters, and electric vehicles. Students interested in bioengineering have the opportunity to compete at the Internationally Genetically Engineered Machines competition. Every day, students have experiences that help them develop skills necessary to succeed.

BEST HIGH SCHOOLS
#20
US News & World Report Best HS in Virginia

BEST HIGH SCHOOLS
#671
US News & World Report Best HS in the US

Year	SAT: Total	Graduation Rates	Matriculation to postsecondary institution
2017	1175	98%	
2016	1091	98%	
2015	1080	98%	88%
2014	1073	96%	86%
2013	1081	97%	
2012	1044	97%	
2011	1056	94%	
2010	1083	94%	

Loudoun County Public Schools: Broad Run High School

Source: Loudoun County Public Schools

Dominion High School, just 6.3 miles from the Innovation Station site, ranks 10th in Virginia. At Dominion High, 77% of students take Advanced Placement courses. Dominion High School is taking learning through doing to a new level with its new makerspace. Regular classrooms are limited in the tools and materials they can offer students. Dominion High's new makerspace and maker carts will provide the resources to create real-world solutions. Instead of a CTE technology education program based on a static computer-based system, students will be engaged in designing and prototyping authentic products for the world. Another example of a makerspace project is a calculus class that will use digital fabrication tools in the makerspace to explore revolutions of solids. The initial build out of the Dominion Makerspace is made possible by a prize from the U.S. Department of Education Career and Technical Education Makeover Challenge. Dominion was one of ten schools chosen from among 600 eligible applications.

#10
US News & World Report Best HS in Virginia

#342
US News & World Report Best HS in the US

Loudoun County Public Schools: Dominion High School			
Year	SAT: Total	Graduation Rates	Matriculation to postsecondary institution
2017	1153	90%	
2016	1014	94%	
2015	1100	95%	88%
2014	1110	88%	90%
2013	1084	93%	
2012	1076	91%	
2011	1074	94%	
2010	1078	93%	
Source: Loudoun County Public Schools			
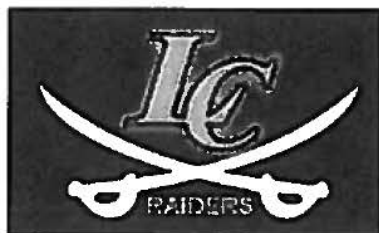
Loudoun County High School, 16.1 miles from the Innovation Station site, ranks 21st in Virginia. At Loudoun County High, 93% of students graduate and 61% of students take Advanced Placement courses. Beyond traditional classroom education, Loudoun County high is committed to giving students hands-on experience. For example, students have the opportunity to tour K2M as part of a business management class to meet with management and learn what it takes to start a business. Students have the opportunity to build their own robots and develop computer software. In Rocket Lab, students design and build their own rockets, even integrating a pressure sensor and microcontroller for the launch. Experiences such as these allow Loudoun County High to take learning beyond the textbook.

BEST HIGH SCHOOLS
#21
US News & World
Report Best HS
in Virginia

BEST HIGH SCHOOLS
#673
US News & World
Report Best HS
in the US

Loudoun County Public Schools: Loudoun County High School			
Year	SAT: Total	Graduation Rates	Matriculation to postsecondary institution
2017	1163	93%	
2016	1071	97%	
2015	1088	96%	84%
2014	1088	97%	87%
2013	1039	94%	
2012	1081	96%	
2011	1066	92%	
2010	1080	91%	
Source: Loudoun County Public Schools			

Loudoun Valley High School, 24.5 miles from the Innovation Station site, is ranked 22nd among all of Virginia's high schools. At Loudoun Valley High, 97% of students graduate and 65% of students take Advanced Placement courses. In addition to excellent core education offerings, Loudoun Valley High has many enrichment programs. Just one example is the STEM Club that not only meets throughout the year, but also offers a Java Programming Summer Camp. Other opportunities include the Technical Students Association, Future Business Leaders of America, and DECA.

BEST
HIGH SCHOOLS
#22
US News & World
Report Best HS
in Virginia

BEST
HIGH SCHOOLS
RANK
#705
US News & World
Report Best HS
in the US

Loudoun County Public Schools: Loudoun Valley High School			
Year	SAT: Total	Graduation Rates	Matriculation to postsecondary institution
2017	1163	98%	
2016	1089	99%	
2015	1085	97%	89%
2014	1063	97%	84%
2013	1014	99%	
2012	1104	96%	
2011	1091	97%	
2010	1093	97%	
Source: Loudoun County Public Schools			

Stone Bridge High School, just 8.6 miles from the Innovation Station site, ranked seventh among all of Virginia's high schools in 2017. At Stone Bridge High, 99% of students graduate and 78% of students take Advanced Placement courses. Stone Bridge High School has a multitude of enrichment programs. Every year Stone Bridge High send teams of students to competitions in cybersecurity, programming, and robotics. There are chapters of many STEM-based organizations at Stone Bridge, including Science Olympiad, Virginia Math League, Technology Student Association, and Girls Who Code.

BEST
HIGH SCHOOLS
#7
US News & World
Report Best HS
in Virginia

BEST
HIGH SCHOOLS
RANK
#243
US News & World
Report Best HS
in the US

Loudoun County Public Schools: Stone Bridge High School			
Year	SAT: Total	Graduation Rates	Matriculation to postsecondary institution
2017	1174	99%	
2016	1116	99%	
2015	1118	98%	91%
2014	1103	99%	89%
2013	1104	99%	
2012	1098	98%	
2011	1110	98%	
2010	1097	98%	
Source: Loudoun County Public Schools			

Talent | Education | Primary, Secondary Education

B3.b. Briefly describe capital improvement plan, timetable and plan of finance for school system and other significant program providers. Include capital investment in public schools over the last ten years. Also, include information on charter and magnet schools.

Loudoun County's schools are in high demand, and the County has plans to spend over $400M in FY18 thru FY20 on design, construction, and improvements of elementary, middle, and high schools.

The majority of funding will come from general obligation bonds, with a small percentage coming from local tax funding and land sales.

Historical funded capital investment in Loudoun County Public Schools
$ Millions
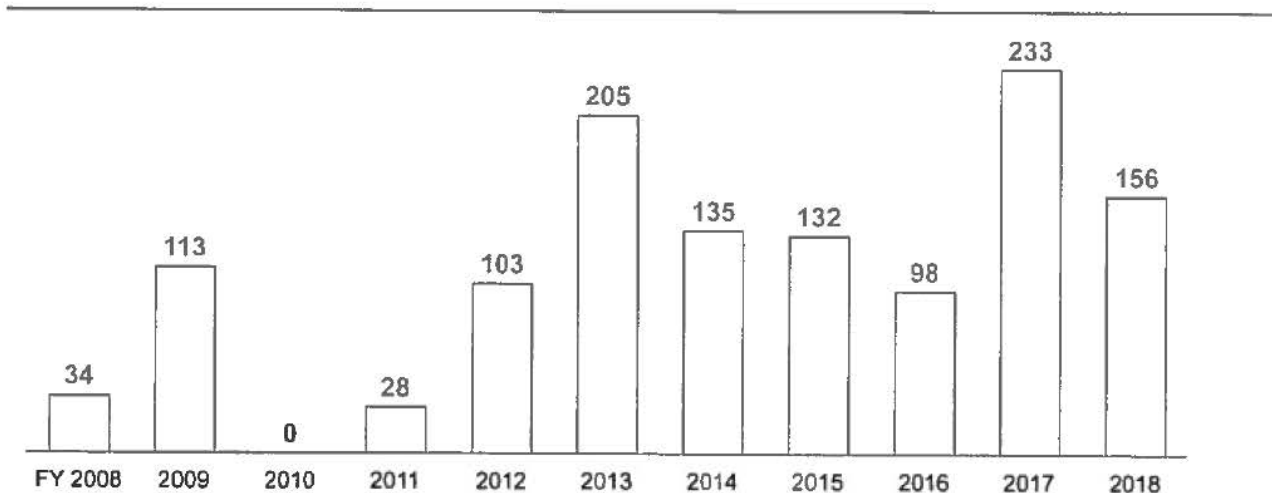
Source LCPS public documents

Young families with schoolchildren continually choose Loudoun to make their homes because of the nationally ranked school system, head-of-household jobs, and quality of life.

As a result, there is unparalleled growth in the school-age population that comes with related operating budget and capital needs. Loudoun County contributes approximately two-thirds of funding for the school system's annual operating budget, and makes significant appropriations for capital investments for schools and facilities on a regular basis. Sometimes these appropriations come in waves, with the lows occurring during the Great Recession and the highs happening when there are capstone projects like construction of the accelerated STEM learning Academies of Loudoun high school campus.

Loudoun County is home to three magnet or charter schools.

- **Middleburg Community Charter School's** vision is to build a creative, committed community of learners equipped to better understand and thrive in the 21st-century world. Inspired by the life and work of Leonardo da Vinci, MCCS will tap into students' inherent curiosity through a hands-on, innovative education.

- **Hillsboro Charter Academy** is creating a brand-new curriculum that is unlike anything else being used in the region. It will span across the disciplines of Science, Technology, Engineering, Arts and Mathematics (STEAM). The lessons themselves will be project-based, giving children an opportunity to gain problem-solving skills to approach real-world concerns as they learn.

- **Academies of Loudoun** houses three magnet-like schools including Academy of Engineering and Technology, Academy of Science, and Monroe Advanced Technical Academy. Their mission is to empower students to explore, research, collaborate, innovate, and to make meaningful contributions to the world in the fields of science, technology, engineering, and mathematics.

Talent | Education | Primary, Secondary Education

B3.c. Describe how education programs are funded at the municipal, county and state levels in your community as well as how and where community and private funding can be allocated.

The Loudoun County School System receives funds from the County, the State, and the Federal Government. The County provides approximately 66% of the annual funding for the School System while the Commonwealth contributes another 31%. The remainder comes from other sources, including federal funding.

Talent | Education | Primary, Secondary Education

B3.d. State assessment results by performance level (basic, proficient and advanced), including (i) two-year trend data for each subject and grade tested and (ii) a comparison between annual objectives and actual performance for each student group.

Loudoun County Public Schools		2015-2016		2016-2017	
		Pass Rate	Advanced Pass	Pass Rate	Advanced Pass
English: Reading	Grade-3 English Reading	84	21	80	22
	Grade-4 English Reading	85	26	86	27
	Grade-5 English Reading	89	36	89	34
	Grade-6 English Reading	88	30	87	31
	Grade-7 English Reading	91	24	90	23
	Grade-8 English Reading	85	19	86	23
	Grade 9-12 EOC English Reading	93	10	93	10
English: Writing	Grade-8 Writing	84	32	86	36
	Grade 9-12 EOC Writing	90	33	92	46
History & Social Sciences	Grade 9-12 Civics & Econ	95	43	95	42
	Grade 9-12 Geography	55	0	44	1
	Grade 9-12 VA & US History	91	18	90	22
	Grade 9-12 VA Studies	94	55	93	54
	Grade 9-12 World History I	92	27	94	26
	Grade 9-12 World History II	90	23	91	28
Mathematics	Grade-3 Mathematics	82	24	80	22
	Grade-4 Mathematics	89	37	88	34
	Grade-5 Mathematics	87	38	88	37
	Grade-6 Mathematics	84	8	82	6
	Grade-7 Mathematics	86	20	83	22
	Grade-8 Mathematics	64	5	69	4
	Grade 9-12 Algebra I	86	12	87	12
	Grade 9-12 Algebra II	92	27	91	26
	Grade 9-12 Geometry	86	16	86	18
	Grade-5 Science	87	33	86	31
Science	Grade-8 Science	89	19	88	21
	Grade 9-12 Biology	91	18	92	18
	Grade 9-12 Chemistry	92	19	93	20

One of Loudoun County Public Schools goals is at least 90% of students will pass all required annual Standards of Learning tests.

Each school sets specific pass rate objectives for special education, non-English speaking, and economically disadvantaged students to address achievement gaps. Specific information can be provided upon request.

Talent | Education | Primary, Secondary Education
B3.e. Primary and secondary school rankings at the state/national level as well as a "scatter map."

See map in the introduction to this section.

Talent | Education | Primary, Secondary Education

B3.f. Special needs and alternative education programs (including programs currently in place, student/teacher ratios in those programs, and success measures for those programs).

LCPS offers array of services, schools, and programs designed to meet students' alternative education needs.

Program	Details
Special Education Services	We are continually committed to "educating the whole child" to ensure safe, healthy, and supportive learning environments for all students. Loudoun County Public Schools provides inclusive special education services for children ages 2 - 21. Schools at all levels are implementing a range of social skills programs and strategies to meet the individual needs of students. LCPS is also partnering with All Ages Read Together (AART) to develop a class/program with Early Childhood Special Education resource students and typically developing community children through a grant approved from Paxton Campus. This new partnership will provide young children with an additional opportunity for an inclusive setting.
Career and Technical Education	The Monroe Technology Center (MTC) provides a strong foundation for students desiring a robust career and technical education. MTC offers 26 programs, 105 dual-enrolled credits, and internship and job opportunities. Closely aligned with the Virginia Department of Education's STEM curriculum, the MTC helps students gain job-ready knowledge and skills while acquiring a respect of self, a conviction in a strong work ethic, and a commitment to lifelong learning.
Non-traditional programs	The Douglass School offers a variety of alternative programs for middle and senior high school students. Programs include: • **High School 3.5 x 4 Program.** This is the largest program at Douglass. It offers a personalized environment with a maximum of 15 students per class. Students take three 90-minute classes and one 45-minute class and can earn seven credits in a school year. A variety of credit and non-credit classes are in the 45-minute block: slower version (yearlong) of traditional classes, SOL prep, Basic Skills, EL support, PEERS, NOVA class, and study hall. • **Individual Student Alternative Education Plan (ISAEP) Program at the Douglass Alternative Education Center.** Prepares students, ages 16 to 18, for the Graduate Equivalency Diploma (GED) exam. Students come and go throughout the year in this program. Over the course of the year, the program can serve up to 40 students, with a maximum of 15 students at a time. • **Middle School Alternative Education Program.** Students struggling within the traditional school setting often find success in this individualized setting. This is both a voluntary and an involuntary program. Class sizes range from eight to 10 students.
Private schools for specialized education	**PHILLIPS Building Futures** provides intensive career programming for students with disabilities. PHILLIPS Building Futures provides students intensive hands-on career training and the opportunity to attend school in a nontraditional manner. Students spend the entire school day and receive all of their instruction at the program job site.

Talent | Education | Primary, Secondary Education
B3.g. Accelerated learning/honors and AP track programs.

Loudoun County Public Schools recognizes gifted students—those with exceptional performance in general intellectual aptitude—with specialized programs starting in kindergarten and carrying through to 12th grade. All 13 LCPS eligible high schools were included among the Washington Post's most challenging high schools, placing them among the top 12% of high schools in America. A selection of programs throughout the K-12 pipeline follows:

Elementary school
SEARCH is an in-class program for K-4 to stimulate curiosity, practice problem solving strategies, incorporate cooperative learning activities, provide opportunities for students to use higher-level thinking skills, and to identify students with exceptional ability.

EDGE is an accelerated program for K-5 students with potential from historically underrepresented populations beginning in kindergarten.

FUTURA is a one-day program at a separate learning center for grades 4-5 that teaches higher-level thinking skills that include analysis, synthesis, and evaluation.

Middle school
SPECTRUM is designed to meet the needs of gifted learners in grades 6-8 with an emphasis on higher-level thinking skills, problem solving, and decision making. It is a half block on a rotating day basis.

High school
Honors level instruction is available to all high school students (9-12) in the core academic subjects to extend the regular curriculum with depth and complexity. This level of instruction helps students develop critical and creative thinking skills in preparation for future advance academic work.

Advanced placement classes are open to all high school students who demonstrate high achievement, interest, or potential to achieve in the advanced college level coursework. LCPS was named to College Board's 2016 Advanced Placement (AP) Honor Roll for performance on AP exams.

Academies of Loudoun combines three programs: the Academy of Science, the Academy of Engineering and Technology, and the Monroe Advanced Technological Academy. These are high-caliber STEM programs for Loudoun County students.

Dual enrollment is offered in conjunction with local community colleges, colleges, and universities, these courses provide opportunities for the advanced student to seek additional challenges and earn college credit while still in high school.

Talent | Education | Primary, Secondary Education

B3.h. Foreign language schools in your community
B3.h.(i). Languages offered
B3.h.(ii). Language immersion programs in regular K-12 schools (include languages offered and success measures).

Languages Offered Elementary Through High School

American Sign Language

Chinese

French

German

Latin

Spanish

Loudoun County is home to several traditional language immersion schools.

- **CommuniKids** - Spanish-immersion preschool and full-day kindergarten program.
- **Speak Bilingual Language Institute** - specialized teaching in Persian and Arabic.
- **Crus Persian Academy** - Farsi learning classes for Iranian immigrants in Virginia.
- **Hola Bebe Company** - Spanish language school for children.

Loudoun County Public Schools is also taking a 21st-century STEM view towards "language" learning and has committed to making coding our second language.

LCPS has partnered with Code to the Future to provide three schools with a supported Computer Science Immersion Program for three years beginning the 2017-18 school year.

Nearly one in four Loudoun residents was born outside of the U.S. and more than 124 languages are spoken in the homes of students in the county.

Loudoun offers a number of resources to ease the transition of immigrating students and their families. A few highlights include the following programs:

Program	Details
Loudoun Literacy Council	Provides low-income adults and children with the literacy proficiency, communication skills, and confidence to not only attain self-sufficiency but also thrive in Loudoun County.
Just Neighbors	Provides legal services to the immigrant community of Northern Virginia, fostering mutual understanding between immigrants and the larger community in which they live.
Northern Virginia Family Service	Assists with early childhood development, foster care and adoption, homelessness and housing, health and well-being, immigration legal services, mental health, youth initiatives, and workforce development.

The goal of STEM education in LCPS is to deepen students' knowledge, skills, and habits of mind that characterize science, technology, engineering, and mathematics.

We have programs that are selective and competitive for students to enroll such as The Loudoun Governor's Career and Technical Academy at Monroe Technology Center and the specialized programs at the Academy of Science at Dominion High School. Additionally, LCPS offers students a variety of STEM courses, clubs, and opportunities that are voluntary and help students develop skills required for the 21st-century workforce.

We are building capacity to provide integrated STEM education to all LCPS students, primarily through the district's instructional initiative in Project Based Learning. Integrated STEM PBL experiences develop student understanding within one STEM area while also learning or applying knowledge and/or skills from at least one other STEM area. Many of our schools have makerspaces and STEM labs. We also implement these themes into our many after-school enrichment programs.

A few highlights of Loudoun's STEM approach include:

Program	Details
One to the World	Instructional initiative that challenges students to create and share products, performances, services, and exhibitions of work relating to authentic problems and tasks of the world.
US DOE CTE Makeover Challenge	Local Dominion High School was recently announced as one of the prize winners. The challenge called for high schools to design CTE focused makerspaces to give students and teachers the tools and space to create, tinker, invent, and explore. Based on Dominion's design, the school's makerspace includes 3D printers, laser and vinyl cutters, and a CNC mill, among other equipment.

Talent | Education | STEM Education

B4.b. Describe whether your current STEM programs are selective (i.e., criteria to gain enrollment and they are not in regular K-12 schools), inclusive (anyone can enroll but separate from regular K-12 schools), or comprehensive (included in regular K-12 schools).

LCPS provides a mix of selective, inclusive, and comprehensive STEM programs for students at all stages in their K-12 education.

The following STEM programs are selective, with selection based on factors such as test scores, writing samples, and/or other application elements, as well as invitation:

Selective programs	Details	Acceptance	Locations
Academies of Loudoun	Three programs will be offered upon opening in Fall 2018: Academy of Engineering & Technology, Academy of Science, and Monroe Advanced Technical Academy.	Selective based on scores, writing prompt, and interest statement.	Currently at multiple schools. Will be opening Fall 2018 in Leesburg.
LCPS Summer STEM Camp	Each year, the camp tries to incorporate the latest tech-savvy learning tools. This year's included 3D printers and doodlers.	Invitation only.	Sterling Middle School location (Sterling area elementary schools and Sterling Middle School).
FUTURA	The FUTURA program seeks to enhance and to develop the intellect of fourth and fifth grade students who have been formally identified as generally intellectually gifted.	Test in. All second graders take Cognitive Abilities Test and third graders take the Naglieri Nonverbal Ability Test; 97th percentile+ screened.	Multiple throughout the county.
The Job for a Day	The Job for a Day program allows Loudoun County juniors and seniors in high school to explore career fields across the 16 career clusters, from agriculture to IT and transportation.	300 Loudoun County Public Schools (LCPS) juniors and seniors were accepted into the program in 2017.	Various.

Inclusive STEM programs provided by LCPS include the following:

Inclusive programs	Details	Acceptance	Location
After school extracurricular activities	Students at both private and public schools have access to many STEM extracurricular activities in Loudoun County. Some of these activities include Technology Student Association, Odyssey of the Mind, Science Olympiad, robotics, Math League, FBLA, and more.	Register at your school.	Various locations.
EDGE Academy	The 18-week program operates for three hours after school on designated days. The program has provided a platform for introducing new technologies into the schools. So far, the students have been using Cubits and 3D printers. The students also have an opportunity to interact with professionals in STEM industries who serve as guest speakers on a weekly basis.	Students at participating schools are required to register.	Forest Grove Elementary, Meadowland Elementary, and Sugarland Elementary.

LCPS also supports a variety of comprehensive STEM programs for all K-12 students:

Comprehensive programs	Details	Acceptance	Location
Computer Science Immersion Schools/Coding Schools	Loudoun students take part in computer coding activities for at least 30 minutes every day, thanks to a partnership with Code to the Future. The three schools will conduct "Epic Builds" throughout the year. These are special events designed to showcase the students' coding skills.	Three schools have access.	Meadowland Elementary, Moorefield Station Elementary, and Round Hill Elementary.

Talent | Education | STEM Education

B4.c. Describe the curriculum offered, how it is determined, how often it is reviewed and how long it takes to change the curriculum.

B4.d. Other student achievement indicators for STEM programs/participants to which you would like to call our attention.

The LCPS STEM curriculum is managed by the STEM content supervisors.

The curriculum is developed in conjunction with teacher curriculum teams with input from community stakeholders and is informed by the Virginia Department of Education's Standards of Learning. Content committees meet yearly to review/revise curriculum. Formalized committees meet during the textbook/resource adoption for each content area (approximately every seven years).

Loudoun recognizes the importance of educating the teachers as well. Inspire Loudoun is a teacher-staffed professional development day where LCPS teachers come together to share with each other best practices in teaching with technology. The conference hosts hundreds of teachers annually who exchange ideas on collaborative practices, personalized learning, flipping the classroom, project and problem-based learning, use of mobile devices for teaching and learning, and much more.

This event has been sponsored by:

Loudoun also has a CSTEM team constructed of tech, science, school-based admin and county admin that meet and review the LSTEM curriculum. They look at the blueprint and see how STEM can be woven into the entire curriculum, rather than standalone.

Talent | Education | STEM Education

B4.e. Plans for next five to ten years for STEM programs (to the extent not discussed in subsection A above).

Programs	Details
Earlier Engagement Initiative	We are strategically providing schools with lower incomes additional opportunities in lower grades to be exposed in STEM. This way we can nurture that interest and provide them a pathway to attend programs like Academies of Loudoun in the future.
Children's Science Center	The Children's Science Center is a 501(c)(3) nonprofit organization dedicated to filling the gap in Northern Virginia with a permanent, world-class interactive exploration center that incorporates traditional museum exhibits with cutting edge discovery experiences. To instill a love of learning STEM in all children by providing unique opportunities to explore, create, and be inspired.

Loudoun offers an unparalleled educational experience for your child.

Your young toddler will have a wealth of STEM opportunities offered by the community, including eight library STEM programs per month and a slew of focused science projects sponsored by the Department of Parks and Recreation. From Little Scientist to Gearbots and 3D Printing, the community-based STEM programming ensures every child has the opportunity to explore their passions.

As your child ages, the options for advancement and exploration expand greatly.

The STEM opportunities across LCPS's 57 elementary schools include experiential learning at all levels, often times in mixed-grade groups. Whether exploring the sciences during structured class-time, attending out-of-school SySTEMic camps hosted by Northern Virginia Community College that focus on hands-on project-based learning, or attending an accelerated learning program (e.g., SEARCH, FUTURA, and SPECTRUM detailed in previous sections), your child will be able to take their love of science, engineering, and computers (or others) into one of the best high school systems in the country. Your family will be able to choose from 15 different high schools, including six of Virginia's top 25 high schools.

For those already fascinated by the world of STEM, the Academies of Loudoun offer three selective public high schools with specialized curriculum and facilities for STEM education. Hands-on opportunities to build hovercrafts, helicopters, and rockets take place in the school system with plenty of opportunities outside of school to continue deepening their passion and experience in STEM careers. In a system where over 96% of high school students graduate on time, your child will be ready to take on the world whether in college, the military, or directly in the workforce.

B5. a. Name of college or university (and distance from Site)
b. Any research specialties that are relevant to HQ2
c. Number of students (by degree/program (and total of all students))
d. Percentage of international student enrollment
e. Specify degree(s) granted in STEM-related fields
f. Number of students graduating each year and companies at which they are working
g. Percentage of graduates matriculating to graduate or professional schools
h. Percentage of graduates employed within one year of graduation
i. Percentage of graduates migrating out of your community. Percentage of graduates staying in the region.
j. Programs and services provided to business in your community (including companies with existing partnerships with colleges/universities)

Higher ed in the most highly educated region.

The Greater D.C. region is not only home to the most educated population in the country, but is also home to a number of world-class institutions across all three jurisdictions – Virginia, Maryland, and the District of Columbia. The region's institutions collectively produce the most computer science graduates in the country from a diverse set of colleges and universities.

When including the higher education institutions located across the entire Commonwealth, of which many graduates re-locate to the D.C. area after graduation, it is easy to see why the region is such a hotbed for talent.
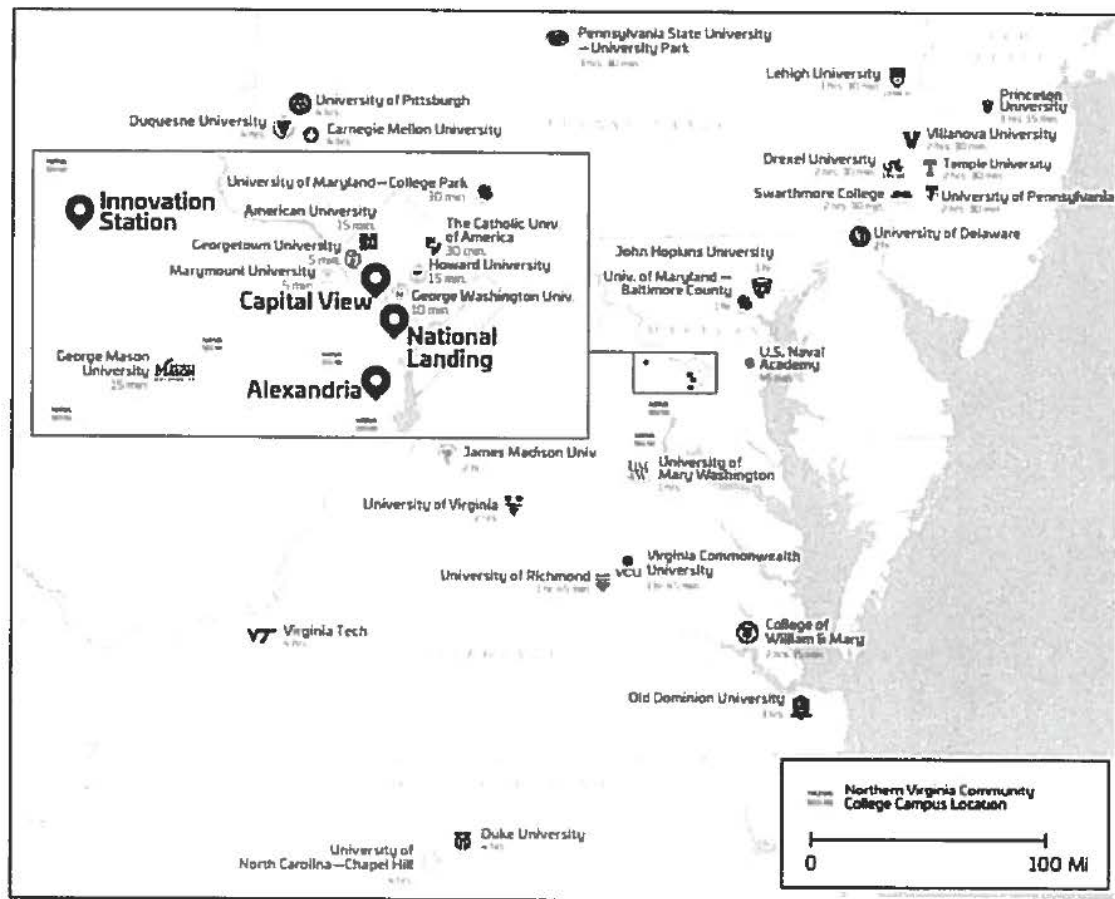
Highlighted VA schools	Commonwealth institutions	Regional assets
Northern Virginia Community College	College of William and Mary	George Washington University
George Mason University	James Madison University	Georgetown
Virginia Polytechnic Institute & State University (Virginia Tech)	Marymount University	UM, College Park
University of Virginia	Old Dominion University	UM, Baltimore County
	Virginia Commonwealth University	Howard University
	University of Mary Washington	

NOVA

**Northern Virginia
Community College**

Northern Virginia Community College (NOVA) is ranked by the U.S. Department of Education as the 14th largest college or university in the United States, and recently noted by the research of Stanford economist, Raj Chetty, as one of the leading colleges in the nation in furthering socio-economic mobility. We are the only community college serving the Northern Virginia region, home to one of the largest concentrations of technology workers and companies in the United States, and encompassing the counties of Arlington, Fairfax, Loudoun, and Prince William, as well as the cities and towns of Alexandria, Falls Church, Manassas and Manassas Park. Created as an "academy of opportunity," it is one of the most internationally diverse colleges in the United States, with a student body consisting of individuals from more than 125 countries.

NOVA is one of the leading technology-focused community colleges in the country. We award the most information technology associate degrees of any community college in the U.S., and the most IT credentials at the certificate and associate level of any college in the Washington metropolitan region. NOVA is also the home to the largest cybersecurity program of any community college in the nation, and the third-largest in the Maryland/D.C./Virginia region based on number of graduates

Despite this already high base, NOVA expects to continue its incredible growth trajectory, expanding dual enrollment programs with local high schools (e.g., Alexandria City Public Schools Early College program), developing innovative transfer pathway programs (e.g., ADVANCE partnership with George Mason University), and launching unique funding opportunities to support underrepresented groups (e.g., NSF grant to support engineering students starting at NOVA and finishing at Virginia Tech).

Overall, NOVA serves as a linchpin for the region's tech talent pipeline, providing early outreach and identification programs for the region's middle and high school students, educating the current workforce while also preparing students with an excellent two-year foundation before matriculating to the region's four-year universities.

NOVA is well-connected with the business community to meet the needs of both students and employers.

The NOVA Workforce office, for example, has partnered companies such as Amazon Web Services to provide veterans with training and education that will expand the skills of the region's workforce. Similarly, NOVA is partnering with Columbus State University and Amazon Web Services to develop a cutting-edge cloud computing curriculum.

The Credentials to Careers initiative is another example of a partnership between NOVA, workforce development organizations, and IT employers. This program provides IT-related education and training to un/underemployed, low-wage, dislocated, and military/veteran workers.

Last, with veterans and active-duty service-members accounting for 15% of the student body, programs like the Credentials to Careers initiative and the AWS apprenticeship offer opportunities for veterans and service men and women structured paths to transition successfully into civilian life.

Bolstering and expanding the pipeline

NOVA SySTEMic is a dedicated college sponsored initiative with dedicated staff that provide STEM outreach efforts in schools throughout the Northern Virginia region including STEM Awareness Days, Summer Technology Camps, and VEX Robotics Competitions. NOVA SySTEMic leads both the regional and State VEX Robotics Championships. As a result of the NOVA SySTEMic outreach, the Northern Virginia region has become the center point of middle and high school teams, this year accounting for 117 of the 141 school teams in the state competitions. Recently, NOVA also was designated by the Virginia General Assembly to be the institutional home for CodeVA, the Virginia affiliate for Code.Org that promotes Computer Science for All initiatives throughout Virginia and provides coding training for Virginia high school teachers.

Northern Virginia Tech Talent Pipeline
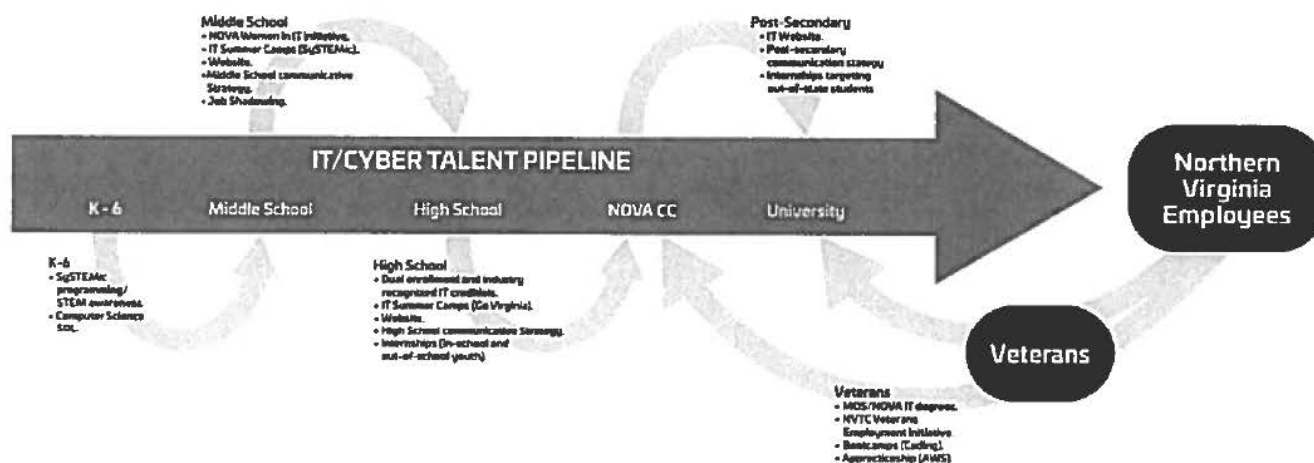
Other efforts include **NOVA's Early Identification Program** (EIP), which provides access to educational resources for middle and high school students who will be the first in their families to attend a college or university. Founded over 20 years ago, over 600 enrolled students are actively pursuing higher education due to funding from our corporate alliances, individual donors, and our partnership with seven local public school systems in Northern Virginia.

Enrollment and Graduate Data[1]

Degree/ program	Enrollment	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Liberal Arts And Sciences, General Studies And Humanities	13,501	Biological and Physical Sciences	374	31%	Inova Health Care Services	328	0.5%
Business, Management, Marketing, And Related Support Services	7,388	Information Technology	373	31%	United States Army	314	0.5%
Computer And Information Sciences And Support Services	5,611	Engineering, General	178	15%	General Dynamics Corporation	256	0.4%
Social Sciences	3,871	Computer Science	169	14%	Navy Federal Credit Union	250	0.4%
Multi/Interdisciplinary Studies	3,514	Computer and Information Sciences, General	54	4%	United States Marine Corps	230	0.4%
Engineering	2,056	Computer and Information Systems Security/Information Assurance	24	2%	Booz Allen Hamilton Holding Corporation	210	0.3%
Visual And Performing Arts	1,384	Biology Technician/Biotechnology Laboratory Technician	10	1%	Caci International Inc	206	0.3%
Health Professions And Related Programs	1,164	Architectural Technology/Technician	10	1%	Fairfax County Virginia	205	0.3%
Mechanic And Repair Technologies/Technicians	621	Engineering Technology, General	9	1%	Wells Fargo & Company	185	0.3%
Other programs	2,232	Total STEM associate degrees	1,201	100%	Verizon Communications Inc.	182	0.3%
Total enrollment	41,342						

	Distance to site (miles)				
	Alexandria-Eisenhower	Capital View	Innovation Station	National Landing	Graduates in D.C. region (%)
Alexandria	5	7	30	6	74%
Annandale	12	13	22	14	
Loudoun	31	24	7	27	
Manassas	32	28	17	31	
Medical Education	8	13	27	12	
Woodbridge	21	26	34	24	

[1] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures come from US Dept of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

GEORGE MASON UNIVERSITY

George Mason University (GMU) is the largest public research university in Virginia. Established as an independent institution only in 1972, the university has grown rapidly to more than 36,000 students from 130 countries and all 50 states. Spread across four campuses in Virginia (and one in Songdo, Korea), the university is a national example of inclusive excellence: it boasts one of the top 25 most diverse student populations in the nation, delivers best-in-class student loan repayment rates, and registers no gaps in graduation gaps across ethnic groups, a sadly rare accomplishment across American higher education. Also, the university has emerged as a top tier research institution ("Very High Research" Carnegie classification).

The Volgenau School of Engineering, in particular, has been a major driver of growth in recent years. The current enrollment of 7,300 students is more than double 2012's figure. With a heavy emphasis on IT degrees, the school is the 14th-largest producer of IT degrees in the country. Despite this existing scale, the school has plans to continue its double-digit annual growth, setting a goal to reach 10,000 students by 2020.

George Mason's student body is also representative of the diverse population that calls the Greater D.C. region home. Ranked the 22nd most diverse school in the country by *U.S. News & World Report*, the university has achieved the rare feat in higher education in closing the graduation achievement gap between races.

George Mason University graduation rates
Fall 2010 cohort, six-year completion rates

	Overall	Asian	Black	Hispanic	White
GMU	69.9	73.9	73.7	69.0	69.3
National	51.9	63.1	37.1	46.2	54.2
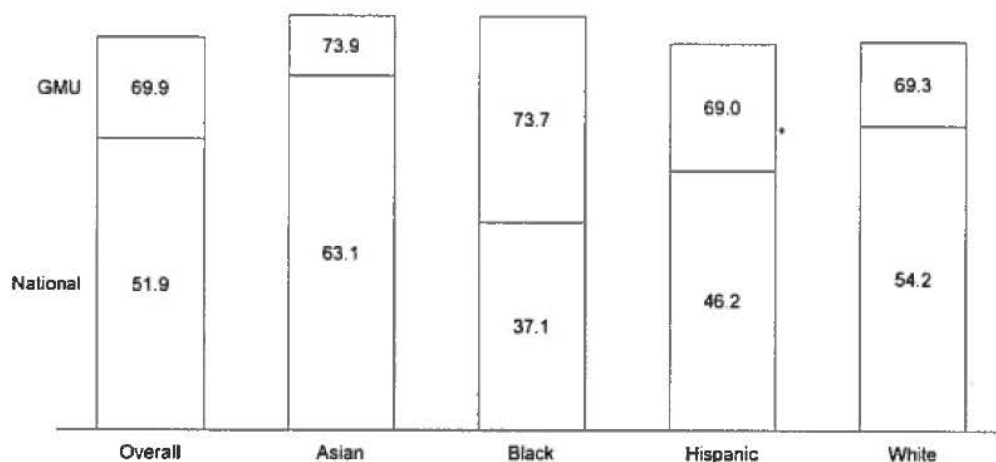
Source: George Mason University,

At a university where nearly half of the students enter through transfers, providing support and resources to ensure all students, regardless of background or life experiences, have the opportunity to succeed has been critical to achieving parity in graduation rates.

As one of just 115 **R1** research institutions in the country, the universities broad research efforts include specialties in IT and especially cybersecurity.

Examples of GMU's research centers include the following:

Research centers	Details
Machine Learning and Inference Laboratory	Conducts fundamental and experimental research on the development of intelligent systems capable of advanced forms of learning, inference, and knowledge generation, and applies them to real-world problems.
Learning Agents Center	Focuses on development of cognitive assistants that learn complex problem-solving expertise directly from human experts.
Center for Secure Information Systems (CSIS)	Provides a dedicated environment to encourage the development of expertise in both the theoretical and applied aspects of information systems security at the first academic center founded in the U.S. devoted to security issues
Center for Assurance Research & Engineering (CARE)	Conducts research on the most critical cybersecurity issues in the world today, offering expertise on the full breadth of topics including securing mobile devices and mobile apps and analyzing risk and providing technical solutions for newly connected technologies including drones, autos, and medical devices
Center of Excellence in Command, Control, Communications, Computing, Intelligence, and Cyber (C4I and Cyber Center)	Performs advanced research in defense, intelligence and security-related Information Technology, serving as a bridge between military requirements, civil-security needs, and faculty who possess relevant expertise
Center for Configuration Analytics and Automation (CCAA)	Builds a critical mass of interdisciplinary academic researchers and industry partners for addressing the current and future challenges of configuration analytics and automation to improve service assurability, security and resiliency of enterprise IT systems, cloud/SDN data centers, and cyber-physical systems by applying innovative analytics and automation through multi-university, multi-industry partnership

GMU provides a broad suite of services to foster entrepreneurship in the Greater D.C. region.

From efforts to commercialize university technologies to supporting entrepreneurs to hone their business plan, GMU plays a critical role in the region's tech and startup ecosystem.

University technology transfer and commercialization efforts	**Innovation Commercialization Assistance Program (ICAP).** Commonwealth-funded and backed by Virginia's SBDC, ICAP provides counseling, mentoring, and Lean Startup-based instructional programs to entrepreneurs of typically early stage companies, preparing them for acceleration and eventual funding within the Commonwealth.
Mason Enterprise Center	University-based economic development enterprise that offers a broad array of activities including business counseling, seminars, publications, sponsored research programs, and information services to strengthen the decision-making and operations of businesses and other institutions throughout the D.C. metro region. MEC is particularly focused in the areas of small business services, incubation and acceleration, government contracting, international business, entrepreneurship, technology ventures, and telework initiatives.
Center for Innovation and Entrepreneurship	Interdisciplinary hub in the School of Business that offers participants opportunities to explore and learn about creativity, innovation, and entrepreneurship, as well as experiment with concepts and tools or start up a venture or initiative.
MIX – the Mason Innovation Exchange	Through a combination of programming (market-driven startup accelerators, for example) and collaboration spaces, MIX will enable entrepreneurship and innovation opportunities for students and faculty. Alongside significant investment by private-sector partners, MIX will spur commercialization of innovations and create new businesses that build the innovation economy here.
MIX@Fenwick	Student-centered collaboration and event space that is the center of gravity for entrepreneurship at Mason.
MIX@Innovation	Network of on-campus entrepreneurship-focused collaboration and maker spaces open to the entire Mason community of students, faculty and staff.
Mason Innovation Lab	Provides physical space, a community and a process that serves to support and accelerate teams of Mason innovators and entrepreneurs.

George Mason's partnerships extend beyond offering internships at world-class firms like Google, Amazon, and Lockheed Martin to students.

GMU's employer partnerships get involved in the details of the curricula, partnering with faculty and administrators to ensure students are prepared to meet the rapidly-changing needs of today's high tech firms. A few examples of these partnerships include the following:

Involvement in curricula	NORTHROP GRUMMAN	Partnership developed the nation's first bachelor of science in cyber security engineering program to meet the needs of the industry
Involvement in capstone courses	Booz	Allen	Hamilton	**Machine learning:** designed a system that includes applications of machine intelligence that can replace or reduce the level of human interaction required to support a cyber platform or perform a security function
	netcomm	**Mobile user interface UI/UX application:** generated a mobile user interface UI/UX application by redesigning NetComm's Beacon data analytics software
Direct sponsorship of research	aws DARPA	**Cybersecurity for cloud networks:** Project is in second 18-month period designing a means to respond against distributed-denial-of-service (DDOS) attacks.
	Adobe	**Applying machine-learning algorithms to visual technology:** researchers are developing a new photo-editing technique that allows people to modify their pictures to reflect different materials. **Improve video streaming on mobile phones:** researchers explored ways to utilize the new features offered by HTTP/2 for video streaming to mobile devices to make media playback on phones smoother while consuming less power
Advisory boards	Volgenau School of Engineering Advisory Board	Creates synergy between the school and the professional community by addressing workforce development demands, industry expectations, and employment trends

The university is among the most diverse universities in the country and still has managed to close the disparity in graduation rates between races.

Mason's STEM Accelerator Program in the College of Science has been extremely successful in increasing the number of STEM majors, improving retention rates of STEM students, reducing the time to graduation for STEM students and helping STEM graduates join the workforce or continue their education in a STEM discipline. The program has helped to create new initiatives at all levels including:

- **STEM Mania**. Summer camp for grades 3-5 students
- **FOCUS**. Females of Color Underrepresented in STEM summer camp for middle school girls
- **High School Mentored Research**. Through partnerships with school districts in Northern Virginia
- **Governor's School @ Innovation Park**. A collaborative dual-enrollment venture between three public school systems and GMU
- **STEM Boot camp**. A pre-interventional program for incoming freshmen to get them ready for four-years of college in STEM
- **Undergraduate Learning Assistants Program**. Offers peer-to-peer mentoring opportunities both within the university as well as partnering community college
- **Research Experience** for undergraduate and graduate students. Offers mentorship and experiential learning
- **Discipline Based Education Research**. Provides a platform for sharing best teaching practices between faculty
- **STEM Teacher Professional Development (PD) Programs**. For engaging teachers in effective pedagogical practices through problem solving and lesson study)

The STEM education efforts from the program in the college has been recognized through the "Programs That Work awards" (both in 2015 and 2016) that recognize exemplary mathematics, science, and integrated STEM programs for which there is evidence of a positive impact on student or teacher learning from across the Commonwealth of Virginia in both rural and urban areas and include local as well as statewide programs.

A few additional examples of the efforts to bolster the pipeline while also expanding access and success rates for underrepresented groups include the following:

Supporting high-quality K-12 STEM education	Virginia Initiative for Science Teaching and Achievement	Engages partners such as Northrup Grumman, Google, and IBM to provide intensive science teacher professional development across 47 school districts and six universities, with dramatic increases in test scores and numbers of high achieving students.
Structured program to support students through matriculation	Student Transition Empowerment Program (STEP)	Structured summer program that focuses on first-generation students transitioning into college
Fun, hands-on experiences to inspire students	MASON GAME & TECHNOLOGY ACADEMY	**Mason Game & Technology Academy** (MGTA) a partnership between the Virginia Serious Game Institute (VSGI) and the Mason Computer Game Design Program. Courses are designed by college faculty for 9-18 year olds to expose students to the world of game design and entrepreneurship.

Overall, the university strives for diversity and inclusivity in the student body, classroom, and campus life. The Campus Climate Committee and Diversity Research Group provide outreach and resources to underrepresented groups. George Mason also is a national leader in its efforts to include those with intellectual and development disabilities, such as the MASON Life program, which is a post-secondary program for young adults with intellectual and developmental disabilities that offers a university experience in a supportive academic environment. Other efforts focused on such disabilities include the Kellar Institute for Human disAbilities and the Mason Autism Support Initiative.

Enrollment and Graduate Data[2]

Degree/ program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Business, Management, Marketing, And Related Support Services	4,025	17%	611	6%	Information Technology	398	18%	Booz Allen Hamilton Holding Corporation	900	0.8%
Computer And Information Sciences And Support Services	2,535	11%	1,089	11%	Biology/Biological Sciences, General	292	13%	Deloitte LLP	535	0.5%
Education	298	1%	2,575	25%	Computer and Information Sciences General	205	9%	Inova Health Care Services	525	0.5%
Social Sciences	2,055	9%	640	6%	Computer Systems Networking and Telecommunications	134	6%	Northrop Grumman Corporation	448	0.4%
Health Professions And Related Programs	1,788	8%	543	5%	Electrical and Electronics Engineering	110	5%	ACCENTURE, INC	427	0.4%
Engineering	1,516	6%	545	5%	Civil Engineering, General	102	5%	United States Army	415	0.4%
Biological And Biomedical Sciences	1,546	7%	400	4%	Mathematics, General	79	4%	General Dynamics Corporation	401	0.4%
Homeland Security, Law Enforcement, Firefighting And Related Protective Services	1,500	6%	238	2%	Biomedical Sciences, General	78	4%	Caci International Inc	397	0.4%
English Language And Literature/Letters	1,105	5%	207	2%	Systems Engineering	75	3%	Lockheed Martin Corporation	396	0.4%
All other programs	7,001	30%	3,308	33%	Neuroscience	82	3%	Federal Home Loan Mortgage Corporation	349	0.3%
Enrollment	23,371	100%	10,156	100%	Other programs	860	30%			
Total enrollment		33,527			Total STEM degrees	2,198	100%			

	Distance to site (miles)							
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing	Intl. students (%)	Graduates in D.C. region (%)	Graduates matriculating to grad. school (%)	Graduates employed within 1 year (%)
14	17	19	18	5.9%	70%	28%	90%

[2] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

Additional details on STEM degrees

Full list of STEM degrees, 2015-16

STEM Degrees	Count
Information Technology	398
Biology/Biological Sciences, General	292
Computer and Information Sciences, General	205
Computer Systems Networking and Telecommunications	134
Electrical and Electronics Engineering	110
Civil Engineering, General	102
Mathematics, General	79
Biomedical Sciences, General	78
Systems Engineering	76
Neuroscience	62
Chemistry, General	61
Information Science/Studies	59
Computer Engineering, General	59
Forensic Science and Technology	47
Physics, General	35
Dispute Resolution	30
Animation, Interactive Technology, Video Graphics and Special Effects	29
Mathematics and Computer Science	28
Cyber/Computer Forensics and Counterterrorism	27
Data Modeling/Warehousing and Database Administration	27
Computer and Information Systems Security/Information Assurance	26
Bioengineering and Biomedical Engineering	25
Sustainability Studies	22
Statistics, General	21
Geology/Earth Science, General	21

STEM Degrees	Count
Computer Software Engineering	20
Microbiological Sciences and Immunology, Other	18
Biometry/Biometrics	17
Computer Science	16
Industrial Engineering	15
Engineering, General	10
Biological and Physical Sciences	9
Geological and Earth Sciences/Geosciences, Other	8
Construction Engineering	6
Atmospheric Sciences and Meteorology, General	5
Mathematical Statistics and Probability	4
Applied Mathematics, Other	3
Physical Sciences, Other	2
Epidemiology	2
Astronomy	2
Biological and Biomedical Sciences, Other	1
Neurobiology and Anatomy	1
Biostatistics	1
Mathematics and Statistics, Other	1
Mechanical Engineering	1
Biochemistry	1
Operations Research	0
Bioinformatics	0
Cognitive Science	0

VIRGINIA TECH.

As a comprehensive land-grant university and a leading research institution, Virginia Tech is pushing the boundaries of knowledge in response to global challenges and to define its role a generation into the future. Within a spirited, inclusive culture, Virginia Tech offers 280 undergraduate and graduate degree programs to more than 34,000 students in nine colleges, supports applied research in eight university institutes, and manages a research portfolio of more than $520 million. In line with our mission, Virginia Tech is embedded in virtually every corner of the state with a major presence in NOVA, as well as 11 extension centers and 107 offices in communities throughout the Commonwealth. It is ranked among the top 25 public universities, with employers giving top-ratings to our graduates.

Virginia Tech has been recognized as a Diversity Champion, reflecting the university's commitment to inclusion and diversity as key components of an ecosystem that is rich in opportunities for experiential learning, cross-disciplinary engagement, and the development of cultural awareness and empathy. The university community lives the Virginia Tech motto, Ut Prosim - That I May Serve.

Virginia Tech supports many cutting-edge research centers, including:

Research center	Details
Biocomplexity Institute (with a strong presence in NOVA)	The Biocomplexity Institute creates and deploys powerful data-analytic software platforms, enabled by advanced data mining and machine learning algorithms, to answer some of the most pressing challenges in human health, habitat, and well-being. Cross-cutting research teams leverage funding from top agencies such as DoD/DAPRA, DTRA, DOE, NSF, HUD, Census, and the Commonwealth of Virginia, as well as industry.
Virginia Tech Transportation Institute	As the largest university-affiliated transportation research institute in the nation, the Virginia Tech Transportation Institute supports unique testbeds in collaboration with the VA DOT, including the Virginia Smart Road and associated Urban and Rural Road Extensions, and the NOVA I-66 Automated and Connected Corridor. More than 600 interdisciplinary researchers, undergraduate and graduate students are engaged in naturalistic driving, mobility, infrastructure, and autonomous vehicle research, with a third of the $36 million in annual expenditures supported by over 75 industry sponsors.
Hume Center (with a strong presence in NOVA)	The Hume Center for National Security and Technology research, education, and outreach programs address the challenges of cybersecurity, autonomy and resilience, with focused initiatives in cyber-physical system security, orchestrated missions, and the convergence of cyber and electronic warfare. The program joins an exclusive list of universities as a NSA designated Center for Academic Excellence in Cyber Operations.

Discovery Analytics Center *(with a strong presence in NOVA)*	The Discovery Analytics Center engages cross-cutting faculty and students who conducting leading-edge research in visual and text-based data analytics, machine learning, and computational statistics to tackle knowledge discovery problems in areas of national interest, including intelligence analysis, sustainability, and public health.
Advanced Research in Information Assurance and Security Lab	Studies and solves challenging problems in wireless networks and cyber security, with a particular focus on cognitive radio networks, related technologies for spectrum sharing, and their security implications.
Center for Embedded Systems for Critical Applications	Addresses the major challenges in the conception, design, and implementation of next-generation embedded systems, generating know-how, expert advice, and skilled researchers who tackle the needs of tomorrow's industry and academia.
Center for Human-Computer Interaction	Supports research excellence on all aspects of the interplay between people and interactive technologies through funding programs, shared resources, education, and training.
Center for Engineering Logistics Distribution	Provides integrated solutions to logistics problems through research related to modeling, analysis, and intelligent-systems technologies.
Systems, Networking & Renaissance Grokking (SyNeRGy) Lab	Conducts basic and applied research in parallel and distributed computing that provides scientists and engineers with scalable and efficient computational tools.
Virginia Center for Autonomous Systems	Facilitates interdisciplinary research in autonomous systems technology and hosts research activities spanning applications in water, land, air, and space.

Virginia Tech has many connections to the business community, supporting and inspiring research efforts, entrepreneurship, and the next generation of business and tech leaders.

Business partnerships	Details
The Virginia Tech Carilion (VTC) School of Medicine and Research Institute	In Roanoke VA, the institute was established in 2010 by joining a major research university with strengths in biological sciences and engineering with Carilion Clinic's experience in medical care delivery and medical education. To date, the combined investment in the partnership is over $750 million. The partnership exemplifies the ability of Virginia Tech to bring transformational change to a region and improve the healthcare and quality of life for rural Americans.
Link	Brings a holistic, business-friendly approach to develop and maintain strong and highly responsive relationships with strategic industry partners. The program provides university-level support to deliver a full continuum of programs, including student engagement and recruitment, capstone and experiential learning opportunities, research and technology commercialization.
Industrial Affiliates Programs	Hundreds of industry partners have benefitted from Virginia Tech's industry consortia in computer sciences, energy, manufacturing, computational chemistry, and other technical domains through targeted student recruiting, pre-competitive research, and engaging in a scientific communities of practice with top researchers and other industry partners.
Apex Systems Center for Innovation and Entrepreneurship	The Center of Innovation and Entrepreneurship inspires and empowers students to turn their passion, purpose, and ideas into action through education, programs, and research. CIE supports a strong culture of innovation and entrepreneurship, engaging over 1200 students, 500 alumni and industry partners, and seeding over 150 student start-up teams.

Employer partnerships to support academic programs

Involvement in curricula	GM GENERAL MOTORS	General Motors expressed a need for expanded curriculum in cyber-physical system security, which is critical in their efforts to ensure that automobiles are safe and secure. The Hume Center partnered with the Electrical and Computer Engineering Department to develop and deploy a new graduate-level course in this area, and began offering it in Spring 2017.
Involvement in capstone courses	Capstone Realization of Engineering and Technology (CREATE)	Enables significant industry participation in the capstone design course sequence, which is teed up through an online submission system. Sponsors include UPS, Volvo, Boeing, Harris, General Motors, Canon, and many others.
Direct sponsorship of research	Google	Google is collaborating with the Virginia Tech Transportation Institute to examine national crash data and data from naturalistic driving studies to better estimate existing crash rates, and then compare these results to data from Google's Self-Driving Car program. Collaborative university-industry research programs such as this are helping self-driving cars move quickly from prototype to everyday reality.
Advisory boards	College of Engineering Advisory Board and Committee of 100	The College of Engineering as well as each department have advisory boards comprised of executives in industry and government that participate in annual evaluations of the instructional and research programs, and provide feedback and specific recommendations that reflect future trends and demands in the field. After serving in a leadership capacity, advisors are asked to join the Committee of 100.
Strategic partnerships	LOCKHEED MARTIN	Cultivates brand and relationship with students and faculty by hosting recruiting events and experiences, sponsoring research projects via a master agreement, contributing significant employee time to writing and engaging with capstone course.

Virginia Tech has a number of programs and initiatives to increase the numbers of underrepresented groups in the student body and faculty

Center for the Advancement of Engineering Diversity	The Center provides a range of resources to support for under-represented engineering students with the goal of increasing the recruitment and retention of these students in engineering and computer science disciplines. Through, these efforts and others, the enrollment of women in the College of Engineering (which includes computer science) has increased by 35% since 2010.
AdvanceVT	AdvanceVT began with a grant from the National Science Foundation to promote and enhance the careers of women in academic science and engineering through institutional transformation. Following the successful conclusion of the grant, the high-impact initiatives continue to receive support from the university to benefit women and under-represented faculty in all colleges.

Virginia Tech is committed to inspiring the next generation of engineers and scientists who come from all backgrounds and experiences.

Through a series of workshops, summer camps, and even semester-long experiences, Virginia Tech's outreach to K-12 students is focuses on inspiring and supporting students to enter the STEM disciplines. A few examples of K-12 outreach follow:

C-Tech²	Offers an opportunity for rising junior and senior high school girls to learn about college life--from residence halls to classrooms and everything in-between. Students spend time on hands-on activities to support their passion for engineering and STEM fields, culminating in an engineering design project at the end of the program.
TechGirls	TechGirls is an international summer exchange program designed to empower and inspire high school girls from the Middle East and North Africa to pursue careers in science and technology. Participants complete an eight-day computer science course to create apps while learning about life at an American University.
	Semester-long educational research program developed by the Virginia Bioinformatics Institute at Virginia Tech in partnership with the Virginia 4-H, that puts scientists and engineers in front of children to encourage the exploration of intriguing topics in science, technology, engineering, and mathematics.
Imagination Camp	Hands-on science and engineering summer day camp for rising 7th and 8th graders who are interested in exploring STEM disciplines.

Enrollment and Graduate Data[3]

Degree program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Engineering	4,979	19%	2,131	30%	Mechanical Engineering	438	12%	Booz Allen Hamilton Holding Corporation	588	0.4%
Business Management, Marketing, And Related Support Services	3,942	15%	429	6%	Biology/Biological Sciences, General	310	8%	Deloitte LLP	530	0.4%
Instruction Specific Major	4,102	16%	268	4%	Civil Engineering, General	294	8%	United States Army	535	0.4%
Biological And Biomedical Sciences	2,099	8%	329	5%	Computer and Information Sciences General	278	7%	Capital One Financial Corporation	518	0.4%
Family And Consumer Sciences-Human Sciences	1,805	7%	146	2%	Management Science	239	6%	Wells Fargo & Company	479	0.3%
Social Sciences	1,823	6%	303	4%	Industrial Engineering	231	6%	ACCENTURE, INC	450	0.3%
Agriculture, Agriculture Operations, And Related Sciences	1,176	5%	256	4%	Electrical and Electronics Engineering	206	5%	International Business Machines Corporation	430	0.3%
Computer And Information Sciences And Support Services	726	3%	637	9%	Computer Engineering, General	165	4%	Lockheed Martin Corporation	407	0.3%
Physical Sciences	787	3%	206	4%	Animal Sciences, General	151	4%	Northrop Grumman Corporation	392	0.3%
Other programs	4,518	18%	2,438	34%	Other programs	1,465	39%	PricewaterhouseCoopers LLP	290	0.2%
Enrollment	25,725	100%	7,216	100%	Total STEM degrees	3,777	100%			
Total enrollment	32,941									

Distance to site (miles)						
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing	Graduates in D.C. region (%)	Graduates matriculating to grad. school (%)	Graduates employed within 1 year (%)
255	257	246	259	25%	22%	54%

Additional details on STEM degrees

Among the 71% of Virginia Tech engineering and computer science undergraduates who voluntarily responded to the 2017 First Destinations Post-Graduation Report, 83% accepted a job (69%) or continued their education (14%) within the first six months of completing their degree. The median salary for these graduates was $65,450, 75th percentile was $72,000, and the 25th percentile was $60,000.

Full list of STEM degrees, 2015-16

STEM Degrees	Count	STEM Degrees	Count
Mechanical Engineering	438	Agronomy and Crop Science	35
Biology/Biological Sciences, General	310	Food Science	35
Civil Engineering, General	294	Geology/Earth Science, General	34
Computer and Information Sciences, General	278	Horticultural Science	33
Management Science	239	Meteorology	32
Industrial Engineering	231	Dairy Science	28
Electrical and Electronics Engineering	206	Construction Engineering	28
Computer Engineering, General	165	Microbiology, General	25
Animal Sciences, General	151	Packaging Science	24
Aerospace, Aeronautical and Astronautical/Space Engineering	150	Engineering, Other	14
Biochemistry	135	Educational Statistics and Research Methods	14
Mathematics, General	130	Bioengineering and Biomedical Engineering	13
Chemical Engineering	103	Bioinformatics	12
Computer and Information Sciences and Support Services, Other	90	Environmental/Environmental Health Engineering	11
Mining and Mineral Engineering	70	Polymer/Plastics Engineering	8
Chemistry, General	68	Systems Engineering	7
Materials Engineering	62	Neuroscience	7
Statistics, General	61	Plant Pathology/Phytopathology	6
Agricultural Engineering	60	Nuclear Engineering	6
Physics, General	58	Physical Sciences, Other	5
Engineering Mechanics	51	Naval Architecture and Marine Engineering	5
Biological and Biomedical Sciences, Other	40	Entomology	5

---

[3] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

The University of Virginia (UVA) is a public research university and the flagship for the Commonwealth of Virginia. UVA, long-known for its historic foundations, student-run honor code, and top-notch liberal arts education, has experienced rapid growth in the scale and scope of its computer science and engineering programs. The number of students receiving computing degrees has doubled in the past five years and, to accommodate students who want to learn programming alongside more traditional liberal arts disciplines, the University has rolled out a Bachelor of Arts in Computer Science which is rapidly increasing in popularity.

UVA Engineering is the leader in engineering diversity. Among public four-year engineering schools, UVA has the highest four-year graduation rates for African-American, Asian, Hispanic, and multi-racial students. Unsurprisingly, UVA Engineering also has the highest overall four-year graduation rate for all students.

The university's concerted efforts to increase the number of underrepresented groups, especially women, have shown positive results in recent years. UVA's Computer Science department now ranks among the top-five most gender-diverse undergraduate CS programs in the country. In fall 2017, women made up 28.2% of the students in its three undergraduate computing programs. Not only is UVA increasing the number of women enrolled in its programs, women are also graduating at higher rates than men, with 94% of female engineering students graduating in four years versus 89% of males.

UVA is home to many research centers and institutes, including:

Research centers	Details
Applied Research Institute	Assists customers in government and industry in the formation of the right research project team to ensure success.
Data Science Institute	Solves important problems and provides the workforce of tomorrow through leading-edge research and collaboration with private and government sectors.
Center for Automata Processing	Builds a vibrant ecosystem of researchers, developers, and adopters for the exciting new Automata Processor.
Center for Research in Intelligent Storage and Processing in Memory	Brings together researchers from UVA and seven other universities to remove the separation between memories that store data and processors that operate on the data
Commonwealth Center for Advanced Logistics Systems	Leverages university expertise and industries' real-world experience to solve logistics challenges that arise as complex technological, mechanical, and human systems interact.
Commonwealth Center for Advanced Manufacturing	Brings together best-in-class manufacturers and Virginia's flagship research institutions to collaborate and deliver new production-ready advanced manufacturing solutions to members
Cyber Innovation and Society Institute	Carries out multidisciplinary research and education initiatives that focus on the complex technical, social, and policy challenges posed by emerging cyber innovations to ensure that cyber technology benefits all of society equally, fairly, and dependably
Multi-Functional Integrated System Technology System	Facilitates integration of novel materials, processes, devices, and circuits into multi-functional systems through research partnerships between university, industry, and government stakeholders.
Center for Business Analytics	Engages in industry-oriented predictive analytics research while providing other educational and professional services.
Center for Financial Innovation	Advances our understanding of finance through research and programs focused on corporate finance and capital markets by encouraging the development of high-quality research and education.
Center for Management of Information Technology	Promotes research and education in areas relating to the management of information technology through a program of interdisciplinary cooperation.
Galant Center for Innovation and Entrepreneurship	Develops and supports courses, competitions, events, experiences, and student groups in an effort to catalyze entrepreneurial activity throughout the university.

The university provides extensive support to the business community, with resources including:

Business partnerships	Details
Licensing and Ventures Group	Partners with faculty, entrepreneurs, and investors to bring Innovations discovered at UVA into the marketplace
UVA Seed Fund	Launches and supports new ventures emerging from the university's portfolio to enhance the impact of transformative ideas and addressing unmet needs for technologies considered too early or too small for investment by traditional sources

Employer partnerships to support academic programs

Involvement in curricula	**facebook** CODEPATH*	Used curriculum materials in a network security class designed to give students hands-on training in combating digital threats, which are often difficult and expensive to replicate in classroom environments
	MITRE	Partnered to offer a Systems Engineering Fellowship program, an immersive 12-month program to enable the next generation of technical leaders to design and sustain the systems critical to our nation's future. This one-of-a-kind program integrates interdisciplinary, hands-on project and research experience at MITRE with an accelerated master's degree in systems engineering from UVA.
Involvement in capstone courses	Service Learning Practicum (SLP)	**The SLP course sequence** is a two-semester capstone for computer science seniors. Students are teamed into groups of six and develop software for local nonprofit organizations. At the end of the capstone experience, the customers are provided with working software that meet their current needs. Since 2012, nearly 100 students a year have enrolled in the course sequence.
	(financial services provider)	**Think Like a Fraudster to Prevent Credit Card Fraud:** used a game theoretical adversarial learning approach in order to model the fraudster's best strategy and pre-emptively adapt the fraud detection system to better classify these future fraudulent transactions

Direct sponsorship of research	Snap Inc.	Collaborated with Snap Research group in interactive lens recommendation, in which we design online learning algorithms to perform personalized lens recommendations
	Walmart.com	Collaborated with the Search team in Walmart Lab in mining shoppers' browsing log for personalized item recommendation
	SRG Semiconductor Research Corporation	Funds the Center for Research in Intelligent Storage and Processing in Memory (discussed in the previous section)
	DARPA	
Advisory boards	The Computer Science Department's Industry Advisory Board	Includes local and regional companies that hire many of our undergraduates. At an annual meeting, faculty members give presentations on what we teach in core and elective classes that matter to them. We also present possible curriculum revisions and seek their input

UVA's Office of the Vice President and Chief Officer for Diversity and Equity assists and monitors all areas of the university in their efforts to recruit and retain faculty, staff, and students from historically underrepresented groups and to provide affirmative and supportive environments for work and life.

In addition to administering programs and resources for these groups, the office hosts committees such as the Diversity Council, Disability Advocacy & Action Committee, and LGBT Committee.

The university's efforts to expand access within the tech pipeline extend beyond its campus, reaching into the region's K-12 schools to encourage middle and high school students to enter STEM fields. A few examples include the following:

ExxonMobil Bernard Harris Summer Science Camp (EMBHSSC)	Instills an interest in engineering among middle school students. Participants will enjoy two weeks of interactive activities and classes with UVA's professors and graduate students from the School of Engineering and Applied Sciences which will introduce them to various disciplines, including aerospace, electrical, materials, and mechanical engineering.
Introduction To Engineering (ITE)	The primary goal of the Center for the Diversity in Engineering's Introduction to Engineering (ITE) program is to introduce rising high school juniors and seniors to the theory and practice of engineering through lectures, labs, and exercises in engineering design, applied math, and basic science. Participants will also be introduced to various engineering disciplines through lectures and demonstrations
LEAD: Computer Science Institute (CSI)	Designed to provide rising 10th and 11th grade students with a broad exposure to various topics in computer science. The goal of the program is to create a future generation of students in the field of computing who learn how computer science plays a role in our everyday life through introduction to a variety of computer science topics and applications, classroom interactive lectures, workshops, guest speakers, and projects.
LightHouse for Computer Science	**Increasing Computer Science Diversity through Faculty Education.** Offers the Tapestry workshop, a six-day workshop for high school computing educators which focus on teaching computer science in a way that reaches all high school students regardless of sex or ethnicity. Google provided seed money for the project to begin development of a state-of-the-art MOOC to aid Community College Computer Science faculty to change their programs so that more and more diverse students consider computing majors.

UVA is committed to closing the achievement gap not just between genders but between races as well and has undertaken broad-reaching study to understand how to eliminate the racial achievement gap in STEM fields. An overview of this effort follows:

Partners	Overview
UNIVERSITY of VIRGINIA LMĨ CCALS	**Vision**: Elimination of the achievement and attrition gap for under-represented minorities and female students in STEM fields **Approach:** Partnered with LMI, the Office of Diversity and Engagement in the University of Virginia (UVA) School of Engineering and Applied Science has begun a comprehensive, longitudinal research project to understand these diversity issues affecting STEM education and what it will take to eliminate the achievement gap to address this national security issue. **Desired outcomes**: The program envisions a holistic approach to understanding, tracking, and intervening to ensure all students are successful. From predictive models and dashboards that alert faculty and administrators to potential obstacles in real-time to interventions that incorporate both light- and heavy-touch approaches, this program seeks to take a data-driven approach to solving a critical problem for our country.

Enrollment and Graduate Data[4]

Degree/ program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Not Declared	6,303	40%	0	0%	Biology/Biological Sciences General	291	18%	Deloitte LLP	535	0.4%
Engineering	1,617	13%	666	10%	Systems Engineering	157	10%	Capital One Financial Corporation	508	0.4%
Business, Management, Marketing, And Related Support Services	765	5%	1,300	19%	Computer and Information Sciences General	131	8%	Booz Allen Hamilton Holding Corporation	451	0.4%
Health Professions And Related Programs	495	3%	1,136	16%	Mathematics General	126	8%	Wells Fargo & Company	399	0.3%
Liberal Arts And Sciences, General Studies And Humanities	1,269	8%	0	0%	Chemistry General	112	7%	Ernst & Young LLP	380	0.3%
Social Sciences	1,022	8%	210	3%	Mechanical Engineering	101	6%	ACCENTURE, INC	382	0.3%
Legal Professions And Studies	0	0%	949	14%	Bioengineering and Biomedical Engineering	101	8%	Pricewaterhousecoopers LLP	315	0.3%
Biological And Biomedical Sciences	515	3%	228	3%	Civil Engineering, General	84	5%	International Business Machines Corporation	253	0.2%
Education	0	0%	724	10%	Physics, General	76	5%	JPMorgan Chase & Co	251	0.2%
Other programs	3,844	24%	1,730	25%	Other programs	413	26%	Bank of America Corporation	249	0.2%
Enrollment	15,830	100%	6,943	100%	Total STEM degrees	1,682	100%	Total Top 10		
Total enrollment		22,773								

| | Distance to site (miles) | | | | | Graduates | Graduates |
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing		Graduates in D.C. region (%)	matriculating to grad. school (%)	employed within 1 year (%)
113	113	102	116		23%	16%	65%

Additional details on STEM degrees

In 2017 UVA awarded a total of 344 Bachelor's degrees in "computational science" (including the BS in Computer Science, the BS in Computer Engineering, a nd the BA in Computer Science) and 91 graduate degrees. The majority of these graduates stay in the state, with nearly half accepting positions in the Greater D.C. region, and another 10% staying in Charlottesville (and 19% relocating to Seattle). According to our 2016-2017 recruiting report, the top employers of these computational science students include: Capital One, Microsoft, Amazon, and Google.

A full list of STEM degrees for the 2015-2016 school year follows:

Full list of STEM degrees, 2015-16

STEM Degrees	Count	STEM Degrees	Count
Biology/Biological Sciences, General	281	Engineering, General	28
Systems Engineering	157	Astronomy	22
Computer and Information Sciences, General	131	Engineering, Other	22
Mathematics, General	126	Materials Engineering	16
Chemistry, General	112	Biological and Physical Sciences	15
Mechanical Engineering	101	Medical Microbiology and Bacteriology	9
Bioengineering and Biomedical Engineering	101	Biochemistry	5
Civil Engineering, General	84	Pharmacology	4
Physics, General	76	Neuroscience	4
Electrical and Electronics Engineering	58	Engineering Physics/Applied Physics	3
Computer Engineering, General	51	Cell/Cellular Biology and Histology	2
Data Modeling/Warehousing and Database Administration	49	Computer and Information Systems Security/Information Assurance	2
Chemical Engineering	47	Physiology, General	1
Statistics, General	37	Biophysics	1
Aerospace, Aeronautical and Astronautical/Space Engineering	36	Computer/Information Technology Services Administration and Manageme	1

The College of William & Mary in Virginia is a public research university located in Williamsburg, Virginia. It is the second-oldest institution of higher education in the United States, the oldest college in the Commonwealth of Virginia, and the oldest institution of higher education in the American South. In addition to its undergraduate program (which includes an international joint degree program with the University of St Andrews in Scotland and a joint engineering program with Columbia University in New York City), the university is home to several graduate programs (including computer science, public policy, physics, and colonial history) and four professional schools (law, business, education, and marine science).

William & Mary is proud to have educated American Presidents Thomas Jefferson, James Monroe, and John Tyler as well as other key figures important to the development of the nation.

William & Mary supports a diverse set of research programs and centers.

The Applied Research Center, for example, hosts a variety of labs in the natural and computational sciences. William & Mary is also a member of the Jefferson National Accelerator Facility (Jefferson Lab), which is comprised of more than 700 physicists, engineers, computer technicians, and other researchers.

The university partners closely with the business community and provides resources through which its students may prepare for careers in business and entrepreneurship.

William & Mary's Office of Economic Development and Business Innovation supports a variety of centers and offices devoted to areas ranging from business connections and Innovations to technology transfer. In addition, the Alan B. Miller Entrepreneurship Center provides students with resources include seed funds, mentors, guest speakers, workshops, competitions, and prototyping equipment. The center also helps develop undergraduate and graduate courses related to entrepreneurship, design, strategy, and finance, among other topics.

William & Mary's Mason School of Business also supports a Corporate Partnership Program. Employees of partners like Capital One, Cox Media, and Man Tech receive discounted MBA tuition, and company leaders provide input into the development of the MBA curriculum.

William & Mary is devoted to diversity and inclusion.

The university's Center for Student Diversity, for example, provides academic, social, and transition support for underserved and underrepresented students and promotes exchange and dialogue between individuals of diverse backgrounds and identities.

Enrollment and Graduate Data[5]

Degree/ program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Social Sciences	663	21%	24	1%	Biology/Biological Sciences, General	143	27%	Deloitte LLP	202	0.5%
Biological And Biomedical Sciences	415	13%	99	4%	Neuroscience	71	13%	Booz Allen Hamilton Holding Corporation	178	0.5%
Business, Management, Marketing, And Related Support Services	395	13%	742	33%	Chemistry, General	69	13%	Capital One Financial Corporation	138	0.4%
Physical Sciences	239	8%	82	4%	Mathematics, General	65	12%	Pricewaterhousecoopers LLP	125	0.3%
Parks, Recreation, Leisure, And Fitness Studies	222	7%	0	0%	Computer Science	59	11%	Ernst & Young LLP	121	0.3%
Psychology	210	7%	32	1%	Physics, General	48	9%	United States Army	121	0.3%
Computer And Information Sciences And Support Services	151	5%	104	5%	Geology/Earth Science, General	35	6%	Wells Fargo & Company	115	0.3%
Legal Professions And Studies	0	0%	695	31%	Computer and Information Sciences, General	30	6%	International Business Machines Corporation	107	0.3%
Education	0	0%	321	14%	Marine Biology and Biological Oceanography	17	3%	United States Dept of State	91	0.2%
Other Programs	830	27%	137	6%	Other programs	4	1%	Kpmg LLP	83	0.2%
Enrollment	3,125	100%	2,236	100%	Total STEM degrees	539	100%			
Total enrollment			5,361							

Distance to site (miles)					
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing		Graduates in D.C. region (%)
146	152	165	150		25%

James Madison University (JMU) is a public coeducational research university located in Harrisonburg, Virginia. With over 22,000 undergraduate and graduate students and 4,000 faculty and staff, the university is the number two public school in the South (*U.S. News & World Report*, 2017). Furthermore, the university offers one of the best values in higher education, ranking in the Top 100 "Best Values in Public Colleges" by *Kiplinger's Personal Finance* in 2016.

Prominent centers for research at JMU include Internet2, a community of U.S. and international leaders in research, academia, industry, and government who create and collaborate via innovative technologies.

In addition, the university's Office of Technology Innovation and Economic Development creates partnerships with the business community and supports research related to entrepreneurship, technology, commercialization, and new venture formation and growth. On a local level, the JMU–RMH Collaborative provides a framework to foster innovation between the university and Rockingham Memorial Hospital, and to facilitate ideas for collaborative projects.

Business Partnerships

JMU partners with the business community through the Shenandoah Valley Technology Council, a nonprofit organization whose members are creators and users of technology who gather together for education, networking, and business development. The College of Business hosts the Center for Entrepreneurship, which coordinates entrepreneurial program components including a research agenda, curriculum and degrees, co-curricular student programs, interdisciplinary initiatives, and engagement with the entrepreneurial community.

In addition, the university's College of Computer Information Systems supports faculty through financial support with industry partners, such as the Capital One Information Security Faculty Scholar award, the Deloitte Scholarship, and the VERIS Consulting Faculty Fellowship.

The university's Office of Access and Inclusion provides support to students from underrepresented groups on campus.

Programs and resources include a center for Multicultural Student Services, Madison Equality, LGBT & Ally Education Program, JMU Interfaith Coalition, and Diversity Education Empowerment Program. The office also hosts a Diversity Council and a Diversity Conference.

Enrollment and Graduate Data[6]

Degree/ program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Business, Management, Marketing, And Related Support Services	3,805	20%	164	11%	Biology/Biological Sciences, General	186	24%	Booz Allen Hamilton Holding Corporation	389	0.5%
Health Professions And Related Programs	3,386	17%	370	24%	Information Science/Studies	137	17%	Deloitte LLP	387	0.5%
Communication, Journalism, And Related Programs	1,290	7%	20	1%	Computer and Information Sciences, General	117	15%	Capital One Financial Corporation	364	0.5%
Social Sciences	1,167	6%	10	1%	Engineering, General	91	12%	Wells Fargo & Company	222	0.3%
Biological And Biomedical Sciences	1,074	6%	21	1%	Mathematics, General	72	9%	ACCENTURE, INC	213	0.3%
Visual And Performing Arts	1,000	5%	68	4%	Systems Science and Theory	62	8%	United States Army	207	0.3%
Computer And Information Sciences And Support Services	1,039	5%	28	2%	Chemistry, General	41	5%	Kpmg LLP	185	0.3%
Parks, Recreation, Leisure, And Fitness Studies	985	5%	72	5%	Geology/Earth Science, General	37	5%	Ernst & Young LLP	172	0.2%
Liberal Arts And Sciences, General Studies And Humanities	985	5%	0	0%	Biotechnology	26	3%	PricewaterhouseCoopers LLP	163	0.2%
Other programs	4,588	24%	785	51%	Physics, General	22	3%	Northrop Grumman Corporation	146	0.2%
Enrollment	19,263	100%	1,838	100%	Total STEM degrees	791	100%			
Total enrollment	20,801									

	Distance to site (miles)						
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing		Graduates in D.C. region (%)	Graduates matriculating to grad. school (%)	Graduates employed within 1 year (%)
133	129	118	132		30%	25%	61%

[6] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

Innovation Lives Here

Marymount University is a coeducational, four-year Catholic university with its main campus located in Arlington, VA. The international student body has consistently represented approximately 70 countries, and has more than doubled in size since 2011. This has also helped Marymount's student body rank in the 99th-percentile for ethnic diversity among U.S. higher education.

Marymount is recognized for its dedication to community service and social justices and has been named to the President's Higher Education Community Service Honor Roll six times. Marymount students are involved in outreach programs including Operation Project STEM, an annual Girls Science Day for D.C. middle schools in low-income neighborhoods, health screening partnerships supporting low-income and immigrant families, and free healthcare clinics for the homeless.

The faculty at Marymount University engages in research across its fields of study.

Seven faculty members in the Health Education and Promotion Graduate Division have ongoing research projects that include Ethics in Public Health, Chronic Disease, Sexual Assault, Stress Management, and Health Issues Related to Sports. Additionally, research in the Computer Sciences division focuses on contextualizing social, legal, and ethical issues associated with solving technical security problems, and the School of Human Services works in conjunction with the Eunice Kennedy Shriver National Institute of Child Health and Human Development on programs including issues that focus on parenting and child development among immigrant families.

The Marymount Educational Partnerships Program provides customized education to employees of client corporations or organizations.

The program can be located on campus or on-site for the client. The Center for Global Education works to develop graduates that understand the importance of including a global perspective in business and that are able to adapt to culturally diverse work environments. The CGE program assists students in finding opportunities with companies and organizations around the world. Marymount has a strong internship program supported by partnerships in the D.C. metro area, including business firms, government and non-profit institutions, health care facilities, sports organizations, and financial institutions.

Marymount University is committed to providing a safe environment, free of discrimination, harassment, and violence.

The faculty and staff participate in the Dream Project, supporting immigrant youth in their pursuit of higher education. Additionally, in 2017, Marymount President Matthew Shank received the Community Partnership Award from Edu-Futuro, an Arlington non-profit that empowers under-resourced Latino and immigrant youth. Marymount hosts a Unification Walk, standing against racism and derogatory language, and has a Global Thinkers residential community focusing on mutual respect and understanding. In 2016, U.S. News ranked Marymount first for ethnic diversity among regional universities in the South.

Enrollment and Graduate Data[7]

Degree/ program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Health Professions And Related Programs	538	23%	361	36%	Information Technology	94	66%	Inova Health Care Services	115	0.7%
Business, Management, Marketing, And Related Support Services	464	20%	149	15%	Biology/Biological Sciences, General	20	14%	Booz Allen Hamilton Holding Corporation	66	0.4%
Computer And Information Sciences And Support Services	225	10%	127	13%	Computer and Information Systems Security/Information Assurance	14	10%	Arlington Public Schools	54	0.3%
Psychology	157	7%	162	16%	Forensic Science and Technology	7	5%	Washington Hospital Center Corporation	53	0.3%
Visual And Performing Arts	182	8%	62	6%	Cell/Cellular and Molecular Biology	5	4%	Virginia Hospital Center	52	0.3%
Biological And Biomedical Sciences	203	9%	0	0%	Biochemistry	2	1%	Ceci International Inc	50	0.3%
Education	62	3%	136	14%	Mathematics, General	0	0%	Deloitte LLP	50	0.3%
Homeland Security, Law Enforcement, Firefighting And Related Protective Services	141	6%	0	0%	Information Technology Project Management	0	0%	General Dynamics Corporation	50	0.3%
Social Sciences	127	6%	0	0%	Total STEM degrees	142	100%	Northrop Grumman Corporation	50	0.3%
Other programs	205	9%	8	1%				Georgetown University	48	0.3%
Enrollment	2,304	100%	1,005	100%						
Total enrollment		3,309								

	Distance to site (miles)							
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing	Intl. students (%)	Graduates in D.C. region (%)	Graduates matriculating to grad. school (%)	Graduates employed within 1 year (%)
13	4	19	8	14.4%	61%	31%	67%

[7] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

Old Dominion University (ODU) is a forward-focused research university with rigorous academics, an energetic residential community, entrepreneurial research and collaboration, and initiatives that contribute nearly $2.1 billion to the economy. Old Dominion University offers over 120 undergraduate programs, over 130 graduate programs at the master's, education specialist, and doctoral levels and a wealth of certificate and professional development programs.

ODU's research interest span disciplines and sectors. Examples include:

Applied Research Center	An interdisciplinary team of researchers working on scientific and technological problems in the areas of thin films, laser and plasma applications, materials technology, and the emerging fields of nanotechnology, biomedical engineering, sensor science and technology, and MEMS.
The Center for Accelerator Science	An interdisciplinary research center operating in close partnership with the Thomas Jefferson National Accelerator Facility.
Center for Cyberecurity Education and Research (CCSER)	Support ODU's mission to serve its students and enrich the Commonwealth of Virginia, the nation, and the world through rigorous academic programs, strategic partnerships, and active civic engagement.
The Center for Innovative Transportation Solutions	Provides analysis of surface transportation issues using modeling and simulation tools. CITS works with planners and leaders at the city, state, and national level to make travel safer and more efficient.
The National Centers for System of Systems Engineering (NCSOSE)	A university Enterprise Research Center of the Batten College of Engineering and Technology focused on decision making for multidisciplinary problems.
Virginia Modeling, Analysis and Simulation Center	One of the world's leading research centers for computer modeling, simulation, and visualization. The mission of the Center is to conduct collaborative MS&V research and development, provide expertise to government agencies and industry, and to promote Old Dominion University, Hampton Roads, and Virginia as a center of MS&V activities.
Virginia Applied Technology and Professional Development Center	Provides support in the fields of engineering management.
Virginia Institute for Performance Engineering	A partnership with Virginia universities and research organizations the specializes in motorsports.

The Office of Research supports tenured and tenure-track faculty researchers addressing today's issues, improving the quality of life, and providing an engine for economic growth across colleges and research centers.

Businesses can gain access to ODU's intellectual capital, innovative technologies, and world-class infrastructure through the Center for Enterprise Innovation. The ODU Center for Enterprise Innovation (CEI) serves as a business-friendly entry point through which local startups, businesses, and organizations can engage the intellectual capital, world-class infrastructure, and cutting-edge technologies of ODU.

The Innovation Research Park @ ODU is one of the only research parks in the nation to be located on the campus of its research institution. IRP sits at the heart of ODU's intellectual capital, research infrastructure, and student and faculty innovation. The park hosts companies such as EVMS Healthcare, Embody, and PPR Inc.

Old Dominion University has a long and proud legacy of commitment to the principles of equality and equal opportunity for all students, faculty, and staff.

The mission of the Office of Institutional Equity and Diversity is to provide leadership and support on matters relating to equity, diversity, respect, and inclusiveness for all members of the Old Dominion University community.

The Office of Institutional Equity and Diversity oversees, facilitates, and supports the University's efforts to ensure equal opportunity for all persons regardless of race, color, national origin, age, marital status, sex (including pregnancy), political affiliation, sexual orientation, gender identity, genetic information, disability, religion, or veteran status in employment, educational programs and activities, and admissions.

Enrollment and Graduate Data[8]

Degree/ program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Not Declared	8,166	42%	0	0%	Biology/Biological Sciences, General	203	17%	United States Navy	841	1.2%
Education	1,246	6%	1,317	34%	Engineering Technologies and Engineering-Related Fields, Other	166	14%	Sentara Healthcare	436	0.6%
Health Professions And Related Programs	1,749	9%	470	12%	Engineering, General	146	12%	Huntington Ingalls Industries, Inc	360	0.5%
Engineering	821	4%	756	20%	Mechanical Engineering	132	11%	United States Army	364	0.5%
Business Management, Marketing, And Related Support Services	1,241	6%	306	8%	Computer and Information Sciences, General	108	9%	Anthem, Inc	209	0.3%
Social Sciences	1,181	6%	118	3%	Engineering, Other	102	9%	Wells Fargo & Company	206	0.3%
English Language And Literature/Letters	884	5%	133	3%	Electrical and Electronics Engineering	72	6%	City of Virginia Beach	201	0.3%
Psychology	805	4%	61	2%	Civil Engineering, General	60	5%	Bank of America Corporation	189	0.3%
Multi/Interdisciplinary Studies	813	4%	0	0%	Computer Engineering, General	37	3%	Northrop Grumman Corporation	180	0.3%
Other programs	2,695	14%	650	17%	Other programs	152	13%	General Dynamics Corporation	166	0.2%
Enrollment	19,605	100%	3,831	100%	Total STEM degrees	1,176	100%			
Total enrollment	21,437									

	Distance to site (miles)			
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing	Graduates in D.C. region (%)
186	192	206	190	13%

[8] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

Virginia Commonwealth University (VCU) is an urban public institution offering its 31,000-plus students over 217 degree and certificate programs through its 13 schools and one college. As one of only 28 public universities with academic medical centers to be designated by the Carnegie Foundation as "Community Engaged" with "Very High Research Activity," Virginia Commonwealth University is taking its place among the nation's premier urban, public research universities. VCU is working to meet the demands of diverse populations through impactful research and creativity, rigorous study and extensive community engagement.

Virginia Commonwealth University's Centers and Institutes (ICs) work across disciplines and research to create new knowledge.

The multiple research labs at VCU allow for leading edge thought to combine with technology on real-world problems.

The VCU Center for Rehabilitation Science and Engineering (VCU-CERSE)	Brings multiple partners to promote research, education, physical medicine and rehabilitation services, and clinical care for America's veterans, children, and adults with disabilities.
Da Vinci Center for Innovation	A collaboration of VCU's Schools of the Arts, Business, Engineering and College of Humanities and Sciences, it is a unique model that advances innovation and entrepreneurship through cross-disciplinary collaboration.
Bioinformatics Lab	Explores and advances the fascinating research field where computer science methods meet problems from life sciences.
High-Performance Data Mining Lab	Focuses on big data mining and machine learning algorithms using high-performance computing.
Software Improvement (SWIM) Lab	Advances the state of the art in software maintenance and software engineering research.
Learning Algorithms and Applications Lab	Develops algorithms and methods for ultra-large-scale data sets for application in bioinformatics, medicine, engineering, science, e-commerce and Web mining.
Natural Languages Processing Lab	Focuses on developing tools and methods that make it possible for the computer to understand human language.
RamSec Cybersecurity Lab	Advances security technology to improve security management, critical infrastructure vulnerability assessment, computation security, cryptographic techniques and anonymity, and privacy.

VCU's office of Sponsored Programs provides a connection between corporate, non-profit, community, and government entities with students and faculty experts to engage in hands-on research.

Students at VCU interact with companies like Pfizer, D30 Technologies, Science Museum of Virginia, and the Clinton Global Initiative. Recent partnerships between businesses and the university include the following:

Business partnerships	Details
navitas	Partnered to increase the quantity and diversity of international students on campus, provide the university with access to the company's global teaching and learning expertise, and establish an on-campus Global Student Success Program.
INDIVIOR	Formed an academic partnership in pharmacoeconomics and health outcomes research (PEOR) through the rcreation of a two-year postdoctoral fellowship program at the School of Pharmacy, which will provide an effective way to prepare individuals for PEOR careers in industry, academia, and government

Efforts to boost entrepreneurship include The Virginia Innovation Partnership, which provides proof-of-concept funding to advance early-stage research and connects academic researchers with mentors, corporations, and investors to accelerate commercialization of the new discoveries.

The Virginia Commonwealth University Division of Inclusive Excellence implements diversity initiatives and fosters a welcoming community that supports individuals of all backgrounds.

The division host year-round events and initiatives that engage campus members in meaningful dialogue and training, which creates opportunities to engage across differences and advance the learning, living, and working community of our university.

Specific initiatives within the division include Building Inclusive Communities, Equity and Inclusion Leadership Symposium, and the Social Justice Fund. Additionally, the President convenes Advisory Groups that discuss, design and implement programs and policies that ensure a welcoming and supportive environment for all students.

Enrollment and Graduate Data[9]

Degree/program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Institution Specific Major	4,337	20%	0	0%	Biology/Biological Sciences, General	410	27%	Capital One Financial Corporation	1,063	1.1%
Health Professions And Related Programs	860	4%	2,954	40%	Information Science/Studies	196	13%	Bon Secours Health System, Inc	474	0.5%
Biological And Biomedical Sciences	2,183	10%	434	6%	Chemistry, General	133	9%	Wells Fargo & Company	464	0.5%
Visual And Performing Arts	2,370	11%	164	2%	Biological and Physical Sciences	110	7%	SunTrust Banks, Inc	396	0.4%
Education	1,461	7%	657	9%	Mechanical Engineering	86	6%	Dominion Resources, Inc	287	0.3%
Business, Management, Marketing And Related Support Services	1,302	6%	787	11%	Mathematics, General	77	5%	Anthem, Inc	248	0.3%
Psychology	1,576	7%	125	2%	Biomedical Sciences, General	75	5%	Bank of America Corporation	244	0.3%
Engineering	782	4%	780	10%	Bioengineering and Biomedical Engineering	70	5%	United States Army	208	0.2%
Homeland Security, Law Enforcement, Firefighting And Related Protective Services	1,318	6%	97	1%	Computer and Information Sciences, General	60	4%	HCA Holdings, Inc	162	0.2%
Other programs	6,049	27%	1,358	19%	Other programs	294	19%	Sentara Healthcare	178	0.2%
Enrollment	22,198	100%	7,346	100%	Total STEM degrees	1,911	100%			
Total enrollment			29,544							

	Distance to site (miles)				
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing		Graduates in D.C. region (%)
101	106	120	105		15%

---

[9] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

Innovation Lives Here

The University of Mary Washington (UMW) is a public university in Virginia that focuses on undergraduate education in the liberal arts and sciences. The core of its main campus of approximately 4,000 mostly residential students in Fredericksburg, Virginia is the College of Arts and Sciences, which offers degrees in various liberal arts disciplines.

Research Centers

Center for International Education	The mission of the Center for International Education (CIE) is to build an internationally minded UMW community in order to prepare students to be globally competent citizens. The Center values diversity and offers an environment that fosters cross-cultural understanding and international cooperation and engagement through transformational programs and experiences.
Center for Leadership and Media Studies	The Center for Leadership and Media Studies supports the study of political leadership and of the mass media's roles in international, national, and Virginia politics.
Center for Spatial Analysis and Research (CeSAR)	The Center for Spatial Analysis and Research (CeSAR) is an interdisciplinary research center focused on education, research, and application development in the field of geographic information science (GISc). The Center serves as a leader and catalyst for the advancement of geospatial thinking and analysis for academic institutions, private industry, and the public sector.

Business Partnerships

Mary Washington collaborates with the business community through its Center for Economic Development, which promotes personal, professional, and economic growth through entrepreneurship, small business development, innovation and competitiveness, research and analysis, and outreach and management. The center's Eagleworks Incubation program extends business development services to local startup and early-stage companies looking to grow their enterprises.

Additionally, Mary Washington collaborates on internships that allow qualified students to earn academic credit by working at technical firms, government offices, or software development agencies. Companies sponsoring recent internships include Zope Corporation, CACI Inc., Systems Technology Forum Ltd., SimVensions, and Computer Sciences Corporation.

The university has a Cabinet-level position that reinforces the University of Mary Washington's commitment to greater diversity and inclusion.

The Chief Diversity Officer is the leader of the Equity and Access programs and oversees the Diversity and Inclusion programs and initiatives.

UMW's Office of Diversity & Inclusion supports students from underrepresented groups through a variety of programs and resources, including the Student Transition Program, which provides year-long support to selected freshmen students as they adjust to new experiences and opportunities at Mary Washington.

Enrollment and Graduate Data[10]

Degree program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Other Programs	3,826	83%	56	15%	Biology/Biological Sciences, General	94	42%	Government Employees Insurance Company	105	0.6%
Business Management and Administrative Services	299	7%	105	28%	Computer and Information Sciences, General	44	20%	Booz Allen Hamilton Holding Corporation	81	0.5%
Biological Sciences/Life Sciences	226	5%	0	0%	Physical Sciences, Other	41	18%	Capital One Financial Corporation	79	0.4%
Education	0	0%	206	56%	Mathematics, General	35	16%	Caci International Inc	56	0.3%
Physical Sciences	143	3%	0	0%	Chemistry, General	7	3%	United States Army	52	0.3%
Mathematics	84	1%	0	0%	Physics, General	3	1%	Northrop Grumman Corporation	45	0.3%
Enrollment	4,367	100%	368	100%	Total STEM degrees	224	100%	General Dynamics Corporation	41	0.2%
Total enrollment	4,726							United States Dept of State	36	0.2%
								Wells Fargo & Company	36	0.2%
								Deloitte LLP	33	0.2%

	Distance to site (miles)							
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing	Intl. students (%)	Graduates in D.C. region (%)	Graduates matriculating to grad. school (%)	Graduates employed within 1 year (%)
46	51	65	49	1.0%	47%	31%	61%

---

[10] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

Innovation Lives Here

The University of Maryland, College Park (UMD) is a public research university located in the city of College Park in Prince George's County, Maryland. The university is the flagship institution of the University System of Maryland and is both the largest university in the state and the Greater D.C. region. Its fall 2016 enrollment counted more than 39,000 students across over 100 undergraduate majors and 120 graduate programs.

Research Centers

Research centers	Details
Institute for Bioscience and Biotechnology	Brings together expertise at the forefront of biomolecular science and engineering, creating collaborative partnerships with industry, government, and academia to translate research Innovations into practical, effective solutions for major technological and medical challenges.
Center for Advanced Study of Communities and Information (CASCI)	Facilitates research and education that advances our understanding of the technology, information, and organization approaches needed to realize the potential of 21st-century communities to support learning, facilitate innovation, transform science and scholarship, promote economic development, and enhance individual and civic well-being.
Digital Curation Innovation Center	Sponsors interdisciplinary projects that explore the integration of archival research data, user-contributed data, and technology to generate new forms of analysis and historical research engagement.
Computational Linguistics and Information Processing	Designs algorithms and methods that allow computers to effectively and efficiently perform human language-related tasks, covering areas such as deep learning, human-in-the-loop machine learning, multilingual text processing, low-resource languages, machine translation, summarization, speech retrieval, and cross-language information retrieval.
Maryland Institute for Technology in the Humanities	Engages in collaborative, interdisciplinary work at the intersection of technology and humanistic inquiry.

UMD partners extensively with businesses, with recent partnerships including:

Business partnerships	Details
leidos	Formed strategic partnership focused on seeding new research initiatives, joint pursuit of third party funding opportunities, and collaboration in autonomy, innovation, entrepreneurship, biometrics, cybersecurity, and data analytics and visualization.
LOCKHEED MARTIN	Created strategic partnership ensuring continued alignment of the research and workforce development priorities, enabling both organizations to jointly pursue new business opportunities and support student recruiting and professional development initiatives.
MITRE	Formed a cybersecurity partnership that became the nation's first and only federally funded research and development center in cybersecurity.
NORTHROP GRUMMAN	Partnered to launch the Advanced Cybersecurity Experiences for Students, the nation's first undergraduate honors program in cybersecurity.
SIEMENS	Created workforce development, research, and education partnership tied to advanced manufacturing, engineering design, and energy, with the largest ever in-kind software grant to a university.

The university's Office of Diversity & Inclusion supports underrepresented students, faculty, and staff.

The Words of Engagement Intergroup Dialogue Program brings together students from various social identity groups with a history of tension or conflict between them, and participants confront those tensions in order to build bridges across groups. In addition, UMD provides diversity trainings for all members of the university community to strengthen understandings of inclusion, equity, and justice, while also placing Diversity & Inclusion officers within most departments and divisions. Councils and commissions for underrepresented students include the Equity Council, President's Commission on Disability Issues, President's Commission on Ethnic Minority Issues, and President's Commission on LGBT Issues.

Enrollment and Graduate Data[11]

Degree/ program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Biological Sciences/Life Sciences	2,119	7%	328	3%	Biology/Biological Sciences, General	568	15%	United States Army	4,886	1.4%
Business Management and Administrative Services	2,780	10%	1,913	18%	Mechanical Engineering	410	11%	United States Department of the Air Force	3,473	1.0%
Education	587	2%	768	7%	Computer and Information Sciences, General	373	10%	United States Navy	2,275	0.7%
Engineering	4,079	14%	2,085	20%	Engineering, General	236	8%	Booz Allen Hamilton Holding Corporation	1,320	0.4%
Mathematics	444	2%	210	2%	Electrical and Electronics Engineering	236	6%	Lockheed Martin Corporation	1,302	0.4%
Physical Sciences	603	2%	497	5%	Information Science/Studies	209	6%	Northrop Grumman Corporation	1,146	0.3%
Remaining programs	17,860	63%	4,810	45%	Civil Engineering, General	187	5%	United States Department of Defense	1,078	0.3%
Enrollment	28,472	100%	10,611	100%	Mathematics, General	162	4%	United States Marine Corps	1,037	0.3%
Total enrollment	39,083				Aerospace, Aeronautical and Astronautical Space Engineering	144	4%	Department of Veterans Affairs	837	0.3%
					Telecommunications Engineering	116	3%	Verizon Communications Inc	828	0.2%
					Other programs	1,130	30%			
					Total STEM degrees	3,761	100%			

Distance to site (miles)				Intl. students (%)	Graduates in D.C. region (%)	Graduates matriculating to grad. school (%)	Graduates employed within 1 year (%)
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing				
20	16	34	16	4.6%	37%	22%	67%

---

[11] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

The George Washington University (GW) is a private research university in Washington, D.C. Its main campus is located in the Foggy Bottom neighborhood with two satellite campuses located in the Foxhall neighborhood of Washington, D.C. and in Ashburn, Virginia. The university offers degree programs in 71 disciplines across 14 undergraduate and graduate colleges and schools, enrolling an average of 11,000 undergraduate and 15,500 post-graduate students from more than 130 countries. The university is well known for preparing leaders for careers in government, international affairs, and journalism.

Prominent research centers supported by GW include:

Research centers	Details
Institute for Integrating Statistics in Decision Sciences	Fosters the integration of modern statistical methodologies into the decision sciences.
Center for the Connected Consumer	Dedicated to understanding how consumers interact with smart objects that are connected to the internet, through innovative research, research partnerships, and conferences and seminars.
Center for International Business Education and Research	Organizes a variety of activities to advance the study and teaching of international business and to support applied research on United States competitiveness in the global marketplace, in collaboration with 16 other universities.
Institute for International Science and Technology Policy	Facilitates and inspires collaboration among scientists, policy experts, government, and industry leaders on science and technology related issues and conducts cutting-edge research on the policy issues that affect science and technology around the world.
High Performing Computing Laboratory	Conducts research on the theory, applications, and design of supercomputers.

The university has been focused on spurring innovation and entrepreneurship in the Greater D.C. region.

A few examples of its efforts include the following:

Office of Innovation and Entrepreneurship	Provides programming around innovation, education, venture creation, and making connections to support GW entrepreneurs and the Mid-Atlantic startup community.
Technology Commercialization Office	Promotes and facilitates the transfer of GW Innovations for the benefit of the university community and the public while leveraging GW resources by partnering with industry experts and entrepreneurs.
Office of Industry and Corporate Research	Seeks, identifies, and tracks opportunities to foster strategic collaborations with industry and corporate partners.

A few successful partnerships are profiled include:

Vector Space	Licensed the plasma thruster technology, which was developed by laboratory professor Michael Keidar.
La Jolla Pharmaceutical	Entered exclusive worldwide license agreement for university's intellectual property rights surrounding therapeutic treatment of patients with hypertension and shock.
Otsuka	Entered three-year agreement through which a professor provides company with support for research on central nervous system disorders and treatment.

Enrollment and Graduate Data[12]

Degree/ program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Other Programs	8,477	1%	10,705	0%	Systems Engineering	199	14%	United States Army	875	0.5%
Business Management and Administrative Services	1,773	3%	1,653	3%	Statistics, General	170	12%	International Business Machines Corporation	643	0.4%
Engineering	767	18%	930	10%	Computer Science	161	11%	United States Dept of State	629	0.4%
Biological Sciences/Life Sciences	325	7%	456	5%	Information Science/Studies	128	9%	Deloitte LLP	625	0.4%
Physical Sciences	85	0%	78	6%	Engineering/Industrial Management	113	8%	Booz Allen Hamilton Holding Corporation	563	0.4%
Mathematics	77	-	431	9%	Biology/Biological Sciences, General	84	6%	Lockheed Martin Corporation	549	0.4%
Education	0	74%	1,142	59%	Epidemiology	71	5%	United States Navy	459	0.3%
Law (first professional)	-	-	-	4%	Mechanical Engineering	64	5%	Verizon Communications Inc	419	0.3%
Medicine (first professional)	-	-	-	3%	Electrical and Electronics Engineering	64	5%	International Bank For Reconstruction & Development	418	0.3%
Enrollment	11,504	100%	16,654	81%	Mathematics, General	40	3%	AT&T Inc	339	0.2%
Total enrollment	27,169				Other programs	323	23%			
					Total STEM degrees	1,417	100%			

	Distance to site (miles)							
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing	Intl. students (%)	Graduates in D.C. region (%)	Graduates matriculating to grad. school (%)	Graduates employed within 1 year (%)
10	3	26	4	11.2%	40%	18%	64%

[12] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

Georgetown University is a private research university in the Georgetown neighborhood of Washington, D.C. Georgetown comprises nine undergraduate and graduate schools and offers degree programs in 48 disciplines, enrolling an average of 7,500 undergraduate and 10,000 post-graduate students from more than 130 countries. Home to the country's largest student-run business and largest student-run financial institution, Georgetown is also a top feeder school for careers in finance and investment banking on Wall Street.

Research Centers

Georgetown's research specialties include the Georgetown University Medical Center, which is home to over 400 scientists involved in basic and clinical research as well as 300 active clinical trials. In addition, the university's Law Center provides innovative research on the relationship between law, policy, and technology through the Institute for Technology Law and Policy and the Center on Privacy and Technology.

The university supports entrepreneurship in the Greater D.C. region and partners extensively with the business community.

Its Georgetown Entrepreneurship Effort, Startup Hoyas, provides a growing suite of academic, extracurricular, and off-campus programs and connects students to accomplished alumni, industry experts, entrepreneurs, and business executives. Other efforts include the following:

WILEY	Partnered to prove the value of virtual learning through building custom eLearning platform, with the ultimate goal of using across top-ranked universities.
Bank of America	Company provided financial support to university's Global Social Enterprise Initiative, which prepares current and future leaders to develop solutions that create both economic and social value, leading to results for students.
Santander	Interdisciplinary partnership between the international bank and the university to support the graduate-level research on the social economy, specifically drawing upon business techniques to both increase profits and help those in need.

Georgetown provides numerous programs and resources to promote diversity and inclusion.

The Office of Institutional Diversity, Equity & Affirmative Action partners with students, faculty, and university leaders to achieve justice and equality in educational and employment opportunities and leads efforts to create an inclusive academic and work environment. The university's Diversity Action Council creates and sponsors diversity-related programming on campus and services as an information resource, while the Center for Multicultural Equity and Access provides academic guidance, personal mentoring, and opportunities to explore diversity to African American, Latino, Asian American, and Native American students. In addition, the Lesbian, Gay, Bisexual, Transgender, and Questioning Resource Center provides education, programming, support services, and a voice for students, faculty, staff, and alumni of all sexual orientations and gender identities.

Enrollment and Graduate Data[13]

Degree/ program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Other Programs	5,487	74%	8,105	73%	Physiology, General	242	29%	Deloitte LLP	602	0.7%
Business Management and Administrative Services	1,346	18%	2,042	18%	Biotechnology	70	8%	United States Dept of State	519	0.6%
Biological Sciences/Life Sciences	408	5%	730	7%	Molecular Biochemistry	56	7%	Booz Allen Hamilton Holding Corporation	401	0.4%
Mathematics	120	2%	95	1%	Information Technology Project Management	56	7%	Pricewaterhousecoopers LLP	353	0.4%
Physical Sciences	85	1%	99	1%	Biological and Physical Sciences	41	5%	JPMorgan Chase & Co	307	0.3%
Education	7	0%	0	0%	Biomedical Sciences, General	41	5%	International Bank For Reconstruction & Development	288	0.3%
Enrollment	7,483	100%	11,072	100%	Computer Science	41	5%	United States Army	248	0.3%
Total enrollment		18,835			Mathematics and Statistics	39	5%	Morgan Stanley	230	0.3%
					Biology/Biological Sciences, General	34	4%	Citigroup Inc	234	0.3%
					Mathematics, General	31	4%	The Goldman Sachs Group Inc	215	0.2%
					Other programs	191	23%			
					Total STEM degrees	842	100%			

Distance to site (miles)							
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing	Intl. students (%)	Graduates in D.C. region (%)	Graduates matriculating to grad. school (%)	Graduates employed within 1 year (%)
10	1	25	4	13.6%	37%	13%	74%

HOWARD UNIVERSITY

Howard University is a federally chartered, private, coeducational, nonsectarian, historically black university (HBCU) in Washington, D.C. Howard is the most comprehensive HBCU in the nation and produces the most black recipients of doctorates of any nonprofit university, though the university is nonsectarian and open to people of all genders and races. The university offers undergraduate, graduate, and professional degrees in more than 120 areas.

Howard is classified as a Tier 1 national university, ranks second among HBCUs by U.S. News & World Report, and is recognized by the Carnegie Foundation as a research university with high research activity.

Howard University's Computer Science faculty has a broad range of research capabilities and focus areas.

Their primary research thrusts are in cybersecurity and big data analytics but also include, but are not limited to, the following topics:

Algorithms and Complexity Theory	Database, Data Visualization, and Analysis	Mobile Computing	Software Engineering and Environments
Artificial Intelligence and Machine Learning	Data Communications and Networking	Multimedia Systems, Visualization, Gaming, and WWW Applications	Systems Engineering
Bioinformatics and Computational Biology	Distributed/Parallel Computation and Operating Systems	Human Computer Interaction	
Computer Architecture and Organization	Information Assurance and Computer Security	Performance Modeling and Simulation	

The research within the department has been funded by several grants from government agencies (i.e. NSF, NIH, NAID, and ARO), and private industry companies (i.e. Microsoft, Lucent, Intel, HP, and Xerox).

During the past few years Howard has established major research centers, institutes, and special programs encompassing the African-American Resource Center, Center for Disability and Socioeconomic Policy Studies, Center for Sickle Cell Disease, Child Development Center, Computational Science and Engineering Research Center, Howard University Air Force Future Aerospace, Science and Technology Center, and university Cancer Center. Other research programs include the following:

Program	Details
The Center for Urban Progress (CUP)	Addresses urban challenges locally, nationally, and globally
The Center for Energy Systems and Controls (CESaC)	Focuses on Electric Energy Systems and the Control, Environment, and Economics of Power
The Center for Preprofessional Education	Provides students with events, networking, and resources to enable positive university and professional experiences
The Howard Nanoscale Science and Engineering Facility (HNF)	State-of-the-art nanotechnology labs open to academia, government, and industry
The Howard University District of Columbia Small Business Development Center (DCSBDC)	Part of the Center for Urban Progress; provides counseling and resources to small businesses in all stages of development
Medical Research Centers	Center for Drug Abuse Research; Collaborative Alcohol Research Center; Cancer Center, Center for Sickle Cell Disease; National Minority AIDS Education and Training Center; Center for Clinical and Translational Science (with Georgetown University)

Howard has extensive partnerships with the business community.

The Institute for Entrepreneurship, Leadership, and Innovation Institute serves as a national repository for information vital to the growth and development of minority business enterprises, and seeks to transform the way entrepreneurship is taught and experienced so that any student will have the opportunity and ability to participate. In addition, the university maintains collaborations with industries, including the Kauffman Campuses Initiative, the Google In-Residence program, and the Yahoo-Computer Lab.

Last, the CS Industrial Affiliates Program (CSIAP) works closely with industry partners to ensure Howard's research and education programs remain on the cutting-edge of industry practices.

xerox   Goldman Sachs   Compuware   leidos

intel   Google   DELL EMC   General Motors

StateFarm   cisco   YAHOO!   NORTHROP GRUMMAN

Microsoft   LOCKHEED MARTIN   CapitalOne

Howard University was founded with the mission to provide access to all fields and disciplines to underrepresented groups, especially African-Americans.

150 years after its founding, the university continues to develop innovative partnerships with companies like Google to tackle issues of access.

Google | Students at Howard West spend three-months learning from Google employees and Howard faculty with the goal of establishing themselves in an industry. Starting in Fall 2018, the program open up to 100 students from Howard and other historically black colleges and universities for a full academic year.

Howard is also recognized for its outreach to middle and high school students, especially those in traditionally black communities.

STEM Program	Details
Bison STEM Program	Attracts and prepares high-achieving high school students. Selected students are required to ultimately pursue a PhD or MD/PhD within a STEM-related discipline. The program's first class started in 2017. Students who are selected into the program receive 75% to 100% coverage of tuition and other costs. The program is modeled after the Meyerhoff Scholars Program.
Middle School of Math and Science	Provides a sound foundation in all academic subjects, with a concentration in mathematics and science.
Smart Lighting Program	Partnership with the National Science Foundation; introduces high school students to digital smart lighting through an intensive summer program.
MS2 Summer Enrichment Program	Howard University Middle School of Mathematics and Science extends extracurricular STEM opportunities to selected students.
NFTE Global Girls Entrepreneurship Tech Business Camp	Offers female students the opportunity to participate in a highly interactive and intensive program focusing on business plans and technological platforms.
HU Summer Transportation Institute	Attracts rising ninth and 10th graders to the broad range of fields in the transportation industry.
The Ambassadors of Engineering Program	As part of the Department of Civil and Environmental Engineering, the program hosts thousands of students at the Discover Engineering Family Day offering hands-on engineering challenges to explore

Enrollment and Graduate Data[14]

Degree program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %	Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016	Top employers (EMSI profiles)	Number of profiles	Percent
Other Programs	3,033	51%	2,333	78%	Biology/Biological Sciences, General	113	43%	Kaiser Permanente	139	0.3%
Biological Sciences/Life Sciences	913	15%	283	9%	Computer Systems Analysis/Analyst	24	9%	Verizon Communications Inc	130	0.2%
Business Management and Administrative Services	853	14%	100	3%	Chemistry, General	22	8%	United States Army	125	0.2%
Engineering	608	10%	89	3%	Civil Engineering, General	18	6%	AT&T Inc	112	0.2%
Physical Sciences	353	6%	53	2%	Mechanical Engineering	14	5%	DC Government	112	0.2%
Education	101	2%	192	6%	Chemical Engineering	14	5%	Deloitte LLP	112	0.2%
Mathematics	28	0%	17	1%	Physics, General	12	5%	International Business Machines Corporation	109	0.2%
Enrollment	5,939	100%	3,067	100%	Electrical and Electronics Engineering	12	5%	Bank of America Corporation	105	0.2%
Total enrollment	8,966				Mathematics, General	9	3%	Wells Fargo & Company	101	0.2%
					Other programs	27	10%	Department of Veterans Affairs	100	0.2%
					Total STEM degrees	263	100%			

Distance to site (miles)							
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing	Intl. students (%)	Graduates in D.C. region (%)	Graduates matriculating to grad. school (%)	Graduates employed within 1 year (%)
11	4	31	5	15.0%	42%	18%	89%

[14] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

The University of Maryland Baltimore County (UMBC) is a dynamic public research university integrating teaching, research, and service to benefit the citizens of Maryland. As an Honors University, the campus offers academically talented students a strong undergraduate liberal arts foundation that prepares them for graduate and professional study, entry into the workforce, and community service and leadership. UMBC emphasizes science, engineering, information technology, human services, and public policy at the graduate level. UMBC contributes to the economic development of the state and the region through entrepreneurial initiatives, workforce training, K-16 partnerships, and technology commercialization in collaboration with public agencies and the corporate community.

UMBC supports a wide array of research centers and institutes, including:

Center for Advanced Sensor Technology (CAST)	Promotes the development of optical based sensors in biomedical, environmental, and homeland defense applications.
Center for Hybrid Multicore Productivity Research (CHMPR)	In partnership with University of Maryland Baltimore, Rutgers, and NC State; addresses issues in the continuous evolution of multicore architectures and open source tools.
Center for Space Sciences and Technology (CSST)	Cooperative agreement with NASA Goddard, UMBC, UMCP, and the Universities Research Association.
Center for Urban Environmental Research & Education (CUERE)	Advances the understanding of environmental, social, and economic consequences of the transformation of the urban landscape.
Center for Women in Technology (CWIT)	Identifies STEM areas where women are significantly under-presented and works to attract well-qualified women to UMBC through special scholarship.
Center for Cybersecurity (CYBR)	Interdisciplinary university center that unifies UMBC's many cybersecurity capabilities.
The Hilltop Institute	A non-partisan health research organization—with an expertise in Medicaid and in improving publicly financed health care systems—dedicated to advancing the health and wellbeing of vulnerable populations.
Maryland Institute for Policy Analysis & Research (MIPAR)	The principal center for social science and public policy research at UMBC that links the analytical resources of the University with policymakers in the state and region, conducting opinion research, policy analyses, and program evaluations on a variety of topics.
The Shriver Center	The Shriver Center addresses critical social challenges by bridging campus and community through engaged scholarship and applied learning. Through the work of The Shriver Center, UMBC has become a national leader in applied learning, community engagement, and community-based service delivery.

Each of the schools at UMBC partners with government agencies, organizations, and industries in research and in making leading authorities available to students.

Companies including Lockheed Martin, Vakharia (aquaculture), and Northrop Grumman partner with UMBC by engaging students and faculty in research and through event participation. Recent examples of business partnerships include:

Business partnerships	Details
NORTHROP GRUMMAN	Formed team to analyze the health data of people suffering various maladies with the goal of improving medical care, and used the tools developed to analyze cyberthreats.
	Launched a $1.6 million partnership to boost science, technology, engineering, arts, and math (STEAM) education in Baltimore City Public Schools through support to Baltimore students, teachers, and communities, including a state-of-the-art STEAM center.
T.Rowe Price	Partnered to support the development of local talent through a Baltimore-based internship and shadowing opportunities to students.
IBM	Created multi-year commitment to form the Accelerated Cognitive Cybersecurity Lab, which will advance scientific frontiers in cybersecurity and machine learning.

UMBC is dedicated to cultural and ethnic diversity, social responsibility and lifelong learning.

The University's Strategic Plan establishes the commitment to diversity as one of its core principals. UMBC provides a number of resources across multiple self-identified groups to support students, faculty, staff, and the community. Programs included the Mosaic Center for Culture and Diversity, LGBTQ Student Life Support Center, the Interfaith Center, DACA programs, Students with Disabilities Services Center, and Welcome Ambassadors.

A few programs providing resources, support, and mentorship to underrepresented groups entering tech include the following:

Cyber Scholars Program	Prepares the next generation of cybersecurity professionals with a focus on increasing participation of women and other underrepresented groups.
Center for Women in Technology (CWIT) Scholars	Provides resources, support, and community to women in tech disciplines
Meyerhoff Scholars Program	Supports underrepresented groups in tech and sciences pursue undergraduate and graduate degrees. The program has more than 1,000 alumni across the nation and nearly 300 students currently enrolled in graduate and professional degrees.
Transfer Scholars in Information Technology and Engineering (T-Site) Scholars	Need-based scholarship funded by the National Science Foundation supporting new transfer students in technology and engineering disciplines.

Enrollment and Graduate Data[15]

Degree/program	Undergraduate enrollment	Undergrad %	Graduate enrollment	Graduate %
Other Programs	7,141	64%	1,590	64%
Biological Sciences/Life Sciences	2,007	18%	78	3%
Engineering	1,395	13%	252	10%
Education	23	0%	410	16%
Mathematics	319	3%	86	3%
Physical Sciences	234	2%	84	3%
Business Management and Administrative Services	23	0%	18	1%
Enrollment	11,142	100%	2,494	100%
Total enrollment	13,640			

Degrees in STEM-related fields	Degrees awarded	Share of STEM graduates, 2016
Information Science/Studies	350	24%
Biology/Biological Sciences, General	343	24%
Computer Science	196	14%
Mechanical Engineering	128	9%
Computer/Information Technology Services Administration and Management, Other	84	6%
Mathematics, General	79	5%
Chemical Engineering	82	4%
Computer Engineering, General	59	4%
Other programs	139	10%
Total STEM degrees	1,440	100%

Top employers (EMSI profiles)	Number of profiles	Percent
Booz Allen Hamilton Holding Corporation	498	0.6%
Deloitte LLP	445	0.5%
National Institutes of Health	433	0.5%
Lockheed Martin Corporation	397	0.5%
FDA	330	0.4%
ACCENTURE, INC	329	0.4%
Federal National Mortgage Association	285	0.3%
United States Dept of State	258	0.3%
Northrop Grumman Corporation	240	0.3%
Marriott International, Inc	221	0.3%

Distance to site (miles)			
Alexandria-Eisenhower	Capital View	Innovation Station	National Landing
47	40	54	39
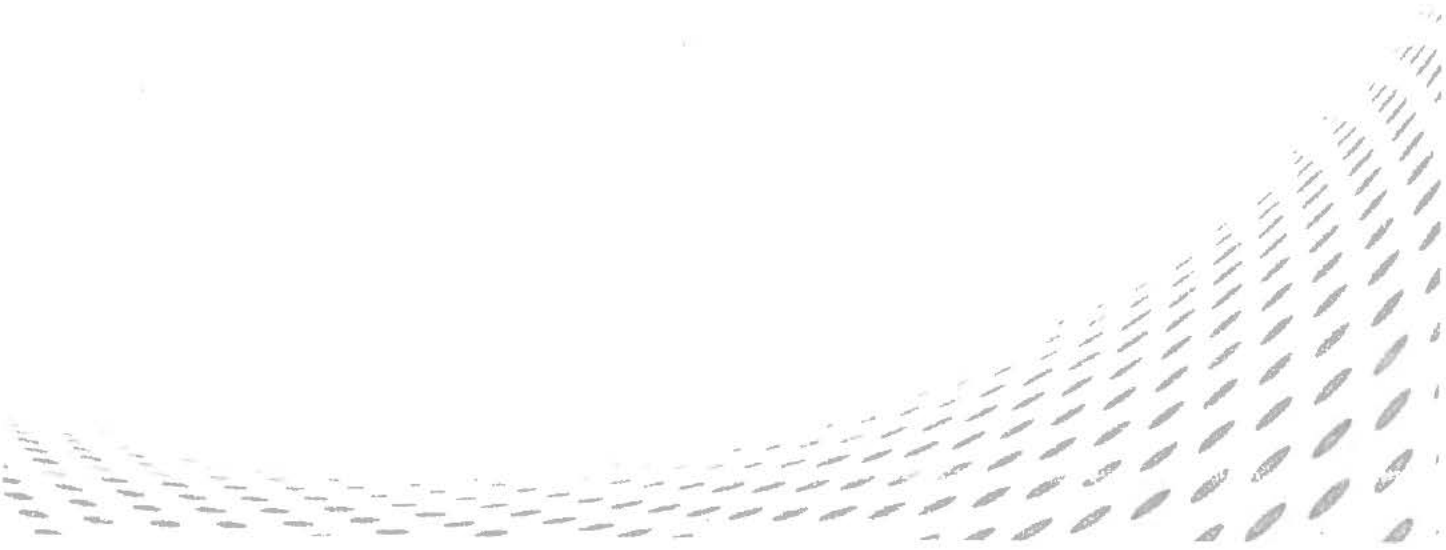
[15] Fall 2016 enrollment figures come from State Council of Higher Education for Virginia (SCHEV) or U.S. Department of Education and National Center for Educational Statistics; STEM degree figures are for Bachelor's and above awarded in 2015-2016 school year and come from U.S. Department of Education, National Center for Educational Statistics; Employer and percent locating in D.C. region comes from EMSI; International makeup, matriculation to graduate school, and post-graduate employment rates come from school websites

Taxes and Tax Policy

Where stability and opportunity meet.

For decades, NOVA and Virginia have been top places to do business. Home to many U.S. and international headquarters, including many Amazon customers and partners, NOVA has the right business environment for your success.

A. Taxes and Tax Policy | State/Commonwealth/Province

Detail the tax structures and policies of the State/Commonwealth/Province, including types of taxes, bases and application and exemptions and credits, including:

1. Income taxation
2. Franchise Taxation
3. Option Taxation, State/Commonwealth/Province
4. Property Taxation
   a. Personal, including Equipment, Machinery, and Tools
   b. Real
5. Sales and Use Taxation
6. Surtaxes
7. Other Taxation (State/Commonwealth/Province)

---

1. Income Taxation

Virginia's corporate income tax applies to all domestic and foreign corporations doing business in the state and having income from Virginia sources. The tax rate is 6% of federal taxable income and modifications may be made, if applicable, such as adding to federal taxable income any state or local income taxes which were subtracted out in computing federal taxable income. The federal income tax is not deductible. Virginia fully conforms to the federal Modified Accelerated Cost Recovery System (MACRS).

If the entire business of the corporation is transacted or conducted in Virginia and the corporation is not subject to a net income tax, a franchise tax measured by net income, or a franchise tax for the privilege of doing business in any other state, the tax is 6% of the entire income of the corporation, subject to minor modifications. If the corporation is engaged in multi-state activities and its income is subject to tax both by Virginia and other states, it pays a tax on only the portion of its income from Virginia sources. In determining this portion, the corporation's income is divided into allocable and apportionable income.

Virginia generally includes only dividends in allocable income – dividends received from companies in which it owns less than 50% of the voting stock. This income is allocated to Virginia only if the payee corporation has its commercial domicile in Virginia. Foreign-source income and dividends received from companies in which the taxpayer owns 50% or more of the voting stocks are excluded from taxation. Additional deductions also are allowed.

All other income is apportioned based on a three-factor formula of property, payroll, and sales.

1. The property factor is computed by dividing the average value of real and tangible personal property owned or rented and used by the corporation in Virginia during the tax period by the average value of real and tangible personal property owned or rented and used by the corporation everywhere. Property owned by the corporation is valued at its original cost plus the cost of additions and improvements. Property rented by the corporation is valued at eight times the net annual rental rate.

2. The payroll factor is computed by dividing the total payroll of the corporation in Virginia during the tax period by the total payroll of the corporation everywhere.

3. The sales factor is computed by dividing the corporation's sales of tangible personal property in Virginia during the tax period by the corporation's total sales of tangible personal property. Virginia sales of tangible personal property are defined as sales of tangible personal property physically received in Virginia by the purchaser (i.e., those sales with a true destination in Virginia, regardless of whether or not the product originated in Virginia).

The ratios of the three factors are averaged, with the sales factor double-weighted to reduce the tax burden on companies that sell most of their product outside Virginia. The corporation's apportionable income is multiplied by the resulting percentage to obtain the amount of apportionable income taxable in Virginia. The income apportioned to Virginia is then added to the income allocated to Virginia and tax is paid on this combined amount.

Beginning in 2015, the corporate apportionment formula was amended to require retail companies to use a single sales factor to determine their Virginia income. Similar to the modification made for manufacturing companies, the modification for retail companies was phased in over several years. From July 1, 2012 to July 1, 2014, retail companies were required to use a triple-weighted sales factor. From July 1, 2014 to July 1, 2015, retail companies were required to use a quadruple-weighted sales factor.

A corporation's taxable year and method of accounting are the same as they are for federal income tax purposes. Affiliated corporations may file separate, consolidated, or combined returns. A consolidated return is a single return for an affiliated group of corporations prepared in accordance with the principles of Section 1502 of the Internal Revenue Code. A combined return is a single return for an affiliated group of corporations in which taxable income is separately computed for each affiliated corporation and then combined. These methods allow a corporation to take advantage of losses by a subsidiary.

Corporations in Virginia are also eligible to apply for certain corporate income tax credit programs.

Tax credit programs for which Amazon would be eligible to apply include[1]:

- **Major Business Facility Jobs Tax Credit:** Qualified companies locating or expanding in Virginia receive a $1,000 corporate income tax credit for each new full-time job created over a 50-job threshold. The threshold number of jobs must be created within a 12-month period. This tax incentive program is administered by the Virginia Department of Taxation.

- **Refundable Research and Development Expense Tax Credit:** Taxpayers are currently allowed a credit against the Virginia corporate income tax for qualified research and development expenses incurred in Virginia.[2] Businesses may claim a tax credit equal to 15% of the first $300,000 ($45,000) qualified research and development expenses incurred in Virginia. The credit may increase to 20% of the first $300,000 ($60,000) if the qualified research is conducted in conjunction with a Virginia college or university.

- **Major Research and Development Expenses Tax Credit:** Taxpayers are currently allowed a credit for qualified research and development expenses incurred in Virginia in excess of $5 million for the taxable year against Virginia corporate income tax liability.[3] Businesses may claim a tax credit equal to 10% of the difference of the taxable year's qualified research and development expenses and 50% of the average of the previous three years of expenses. If no research and development expenses were incurred in any one of the previous three years, then the credit is equal to 5% of the qualified expenses during the relevant taxable year. The amount of the credit cannot exceed 75% of the taxpayer's tax burden for any taxable year. Any credit not usable may be carried forward for up to 10 years. There is a statewide cap of $20 million per fiscal year. Corporations cannot claim credits for qualifying research and development expenses under both the Refundable Research and Development Expense Tax Credit and the Major Research and Development Expenses Tax Credit simultaneously.

- **Worker Retraining Tax Credit:** Virginia employers are eligible to receive an income tax credit equal to 30% of all expenditures made by the employer for eligible worker retraining. If the eligible worker retraining consists of courses at a private school, the credit is equal to the cost per qualified employee, up to $200 per qualified employee annually, or $300 per qualified employee annually if the eligible worker retraining includes retraining in a STEM or STEAM discipline. The credit has a statewide spending cap of $2.5 million in any fiscal year. Eligible worker retraining consists of noncredit courses at Virginia community colleges and private schools, certified by the Virginia Economic Development Partnership, or retraining programs through apprenticeship agreements approved by the Commissioner of Labor and Industry.

---

[1] This section details the standard, by-right incentive programs for which the project would be eligible to apply. Any tax credits that the project might receive under these programs are not factored into the custom incentive package described in the Incentives section of this response.
[2] This program currently has a sunset review date of January 1, 2022. The General Assembly must enact legislation to extend the program prior to January 1, 2022 if the program is to remain open to Virginia companies after this date.
[3] Similarly, this program also has a sunset review date of January 1, 2022.

Innovation Lives Here

2. Franchise Taxation

Not applicable.

3. Option Taxation, State/Commonwealth/Province

The Virginia Department of Taxation has issued several tax rulings to provide guidance to employers who grant both statutory stock options (also known as incentive stock options or ISOs) and nonstatutory stock options (known as NSOs) as part of employee compensation packages. When stock purchased pursuant to exercised options is sold, employers withhold Virginia income tax based on Virginia Forms VA-4 (Virginia Income Tax Withholding Certificate) and Form VA-4b (Virginia Employee's Withholding Income Tax Credit for Income Taxes Paid to Another State) as completed by the company's employees.

Incentive Stock Options (ISOs): Incentive stock options are not subject to federal income tax at the time they are granted or exercised unless the statutory requirements are not met. The gains are recognized when the shares are sold and they are treated as capital gains, provided that a two-year withholding period is met. If the shares are sold before the holding period ends, the gains are treated as ordinary income. For Virginia income tax purposes, capital gains are taxed at the same rate as all other income.

According to previous rulings by Virginia's Tax Commissioner, appreciation in the value of stock from the date of grant to the date of exercise is considered compensation from Virginia sources for services performed in Virginia by an employee. If a taxpayer moves from Virginia after the date the ISOs were granted, the nonresident taxpayer is subject to Virginia income tax on the appreciation of the value of the stock. The amount of a nonresident's Virginia source income with respect to ISOs granted in connection with previous Virginia employment is determined at the time the stock is sold and income or gain is recognized for federal purposes.

Because of the administrative burden for both a nonresident taxpayer and the Department of Taxation in determining whether ISOs held by nonresidents are subject to Virginia income taxation, and in the interest of fairness, the compensation earned from the appreciation of stock acquired through ISOs will not be considered Virginia source income for nonresidents provided that the individuals were not residents of Virginia for at least two years prior to the sale of the stock.

Nonresident taxpayers who do not meet the two-year holding requirement outlined above are subject to Virginia income tax on the appreciation of stock granted pursuant to ISOs. Their Virginia source income would be an amount equal to (1) the lesser of the income or gain recognized for federal income tax purposes or the amount by which the fair market value of the stock exceeded the option price at the date the ISO was exercised, (2) multiplied by the number of days of the taxable year(s), or portions thereof, that the individual resided in Virginia from the period of the ISO grant date to the date of exercise, and 3) divided by the number of days from the ISO grant date to the date of exercise.

Virginia Code § 58.1-461 requires that every employer who pays wages to employees must withhold Virginia income tax from such employees' wages. *Virginia Code* § 58.1-460 defines "wages" for Virginia purposes as wages are defined in §§ 3401(a), 3402, and 3405 of the IRC. Because the IRS does not require income tax to be withheld with regard to ISOs, no income tax withholding is required for Virginia purposes from the grant, the exercise, or the disposition of stock acquired from the exercise of ISOs.

Nonstatutory Stock Options (NSOs): Because nonstatutory stock options generate income at the earliest point at which a fair market value can be readily ascertainable, income from NSOs can be recognized when they are granted, exercised, or sold. The income recognized is considered to be compensation and taxed as ordinary income for federal income tax purposes.

For Virginia income tax purposes as they relate to nonresidents, nonresident individuals will recognize: income from an NSO at the same time compensation is recognized for federal income tax purposes. The amount of income that is subject to Virginia tax will depend on whether the fair market value of an NSO is readily ascertainable. In the event that an NSO has a readily ascertainable fair market value at the time of grant, compensation for federal purposes is equal to the fair market value of the option at the time of grant less any amount paid for the option. For Virginia purposes, salaries and wages of nonresident employees are sourced to their state of employment unless they reside in a state that has entered into a reciprocal agreement with Virginia.

If the fair market value of NSOs are not readily ascertainable until the time they are exercised or sold, compensation from Virginia sources would be equal to the appreciation of the value of the stock between the date of grant to the date of exercise or sale. In a case where an individual moves out of Virginia after the date the NSOs are granted, Virginia source income would be an amount equal to (1) the amount that the fair market value of the stock exceeded the option price at the date the NSO was exercised, (2) multiplied by the number of days of the taxable year(s) or portions thereof that the individual resided in Virginia from the period of the NSO grant date to the date of exercise or sale, and (3) divided by the number of days from the NSO grant date to the date of exercise or sale.

Virginia Code § 58.1-461 requires employers to withhold taxes from employee wages for each payroll period. *Virginia Code* § 58.1-460 defines "employer" as, "the person, whether a resident or nonresident of the Commonwealth, for whom an individual performs or performed any service as an employee..." Further, this section defines "employee" as, "an individual, whether a resident or a nonresident of the Commonwealth, who performs or performed any service in the Commonwealth for wages." Consequently, an employer may be required to withhold Virginia income taxes for an employee who is not a resident of Virginia when that employee earns income from Virginia sources.

When the fair market value of the option is readily ascertainable at the time of grant, employers would withhold Virginia income tax if the employee resided in Virginia or was employed in Virginia at the time of the grant. If the options did not have a readily ascertainable fair market value at the time of the grant, or if the options were sold prior to exercise, employers would be required to withhold income tax on Virginia-sourced income of nonresidents as described above.

In the interests of maintaining a process that is not unfairly or unduly burdensome for employers, the Department of Taxation allows employers to rely on withholding information provided by employees when making a determination about employee residency. Employers may rely on Forms VA-4 and VA-4b when filing Virginia withholding returns and withholding income tax. Employees are responsible for providing updated information to their employer for withholding tax purposes. If employees fail to update withholding information with their employer, they would be liable for any underpayment of Virginia income tax and the corresponding interest and penalty, if applicable. The Department of Taxation recommends that employers request updated withholding information from their employees at the time compensation resulting from the grant of the NSOs is recognized.

4. Property Taxation

a. Personal, including Equipment, Machinery or Tools

Personal property taxes are not levied at the Commonwealth level – they are levied by the localities. Information about rates is provided in the next section as well as in the individual Real Estate sections.

b. Real

Real estate taxes are not levied at the Commonwealth level – they are levied by the localities. Information about rates is provided in the next section as well as in the individual Real Estate sections.

5. Sales and Use Taxation

In Virginia, the combined state and local sales and use tax rate is 6% (4.3% state tax, 1% local tax and a 0.7 percent state tax levied in the localities that comprise Northern Virginia). The additional 0.7% state sales tax is intended to fund transportation infrastructure and is directed to the Northern Virginia Transportation Authority. A seller is subject to a sales tax imposed on gross receipts derived from retail sales or leases of taxable tangible personal property as well as taxable services unless the retail sales, leases, or services are specifically exempt by law. When a seller does not collect the sales tax from the purchaser, the purchaser is required to pay a use tax on the purchase unless the use of the property is exempt. Sales of services are taxable in Virginia when the performance of the service is directly connected to a sale of or directly produces tangible personal property. In addition, communications services, fabrication of tangible personal property in connection with a customer order, meals, and lodging are all taxable.

Wholesalers and distributors do not pay the sales and use tax on items purchased for resale. In addition, manufacturing companies are not subject to taxes on purchases used for production. Additional sales and use tax exemptions include:

- Tangible personal property delivered outside the Commonwealth for use or consumption outside the Commonwealth;

- Tangible personal property delivered to a factor or agent for foreign export;

- Materials, containers, labels, sacks, cans, boxes, drums, or bags for packaging tangible personal property for shipment or sale;

- Charges for planning, creating, or placing advertising in newspapers, magazines, billboards, broadcasting or other media, including providing concept, writing, graphic design, mechanical art, photography, and production supervision;

- Any publication issued daily or regularly at average intervals not exceeding three months and advertising inserts or supplements and other printed matter distributed with or as part of a newspaper or other nontaxable publication (except that newsstand sales of the same are taxable);

- Catalogs and other printed materials (except administrative supplies); paper furnished to a printer for fabrication into these materials; and the envelopes, containers, and labels used for packaging and mailing the materials, provided the materials are stored in Virginia for 12 months or less and the materials will be distributed for use outside Virginia;

- Custom computer software and separately stated labor charges for modifying pre-written computer programs

- There is a sales and use tax exemption at the state level available to data centers that invest $150 million or more, hire 50 or more employees, pay at least 1.5 times the average local wage, and enter into a memorandum of understanding with the Virginia Economic Development Partnership. Colocation facilities can aggregate the capital investment and new job requirements among the data center owner and tenants. These exemptions extend to qualified data center equipment, including servers, routers, generators, chillers, and other enabling hardware.

Food items purchased for home consumption are taxed at a rate of 2.5%, 1% of which is remitted to local governments.

Alcoholic beverages, tobacco, and prepared hot foods sold for immediate consumption are excluded from the definition of food subject to the 2.5% tax and are separately subject to other taxes.

Communications, including telephone, cable TV, satellite TV, and radio (internet service is a non-taxable item) are also taxable at a rate of 6%.

There is a separate state motor vehicle tax of 4.15%; local governments do not levy any sales tax on vehicle purchases.

Items sold in vending machines are subject to a 7% sales tax (6% state and 1% local).

6. Surtaxes

Not applicable.

7. Other Taxation (State/Commonwealth/Province)

Unemployment Insurance Tax: Unemployment compensation offers workers some protection against loss of earnings while partially employed or when released from their jobs temporarily or permanently through no fault of their own. In Virginia, employers must pay the unemployment insurance tax if they have one or more persons employed for some portion of a day for 20 or more weeks during a calendar year or if they pay wages of $1,500 or more in a calendar quarter. Under Virginia law, the entire cost is paid by the employer. Tax rates are based on the employer's past unemployment experience (known as the employer's experience rating) and on the state's unemployment compensation experience as reflected by the condition of the State Unemployment Compensation Trust Fund. Basic computed tax rates range from a minimum of 0.13% on the first $8,000 of each employee's annual wages to a maximum of 6.23%. Additions to the basic rate can include fund building and pool cost factors. New employers pay a rate of 2.53% on the $8,000 wage base for approximately two years unless their computed rate, based on claims, exceeds the new employer rate. According to United States Department of Labor estimates, employers in Virginia paid an average tax rate of 0.28% of total wages in 2017, compared with a national average of 0.59% and an average for all 19 U.S. competitors of 0.56%.

Workers' Compensation Insurance: Workers' compensation is a system that provides cash benefits, medical care, and vocational rehabilitation to employees receiving injuries "arising out of and in the course of employment." In Virginia, an employer must carry workers' compensation insurance with a private insurance carrier or have a certificate of self-insurance issued by the Virginia Workers' Compensation Commission. Employers cannot deduct any part of the cost of workers' compensation insurance from the wages of any employee.

The actual cost of workers' compensation insurance at a specific location varies by industry and by occupation. Effective January 1, 1994, Virginia partially deregulated its rate-making system for workers' compensation insurance, going to a "competitive rate" or "loss costs" estimate. The loss costs estimate is set annually by the State Corporation Commission Bureau of Insurance. The full voluntary market rate consists of the loss costs estimate and other fees and costs that are determined by the company and the private insurance company of its choice.

Companies that do not qualify for the voluntary market rate must adopt the assigned risk rate. Virginia offers one of the lowest workers' compensation rates in the nation. However, according to a report published in 2017 by the National Academy of Social Insurance, Virginia's comparative workers' compensation employer insurance cost in 2015 was $0.77 per $100 of payroll, compared with an average national cost of $1.32 and an average cost for all 19 U.S. competitors of $1.11. This report provides the only comprehensive data on workers' compensation benefits, coverage, and employer costs for the nation, all 50 states, the District of Columbia, and federal programs.

Companies also benefit from a system that has a low frequency of claims, a restrictive definition of compensable injury, a high-quality workforce, and a low rate of attorney involvement. The Virginia Workers' Compensation Commission also provides considerable assistance to employers and employees in the dispute resolution process.

B. Taxes and Tax Policy | Local

Detail the tax structures and policies of the local governments in your community, to include types of taxes, bases and application and exemptions and credits, including:
1. Income Taxation
2. Franchise Taxation
3. Option Taxation, Local

1. Income Taxation

The counties of Arlington, Fairfax, and Loudoun, and the City of Alexandria do not levy local income taxes.

2. Franchise Taxation

Arlington County does not levy a franchise tax.

Fairfax and Loudoun Counties, as well as the City of Alexandria, levy a bank franchise tax.

As the name implies, however, this tax applies exclusively to banks. In addition, under Virginia law banks receive a credit from the Commonwealth against the *state* bank franchise tax assessed against them for any amount paid in *local* bank franchise taxes to city or county governments. The state assesses a bank franchise tax on a bank's net capital at the rate of $1.00 per $100 of net capital. Localities are able to levy bank franchise taxes at a rate of up to $0.80 per $100 of net capital (and Alexandria, Fairfax, and Loudoun levy bank franchise taxes at this maximum rate). Banks are eligible to claim a credit for any local franchise taxes paid, meaning banks in these three localities can claim a credit and still only pay $1.00 per $100 of net capital total ($0.20 to the state and $0.80 to the county or city government).

City/County	Rate	Further Explanation
Alexandria	$0.80 per $100 of net capital	Alexandria levies a bank franchise tax at the maximum allowed local rate.
Arlington County	$0.80 per $100 of net capital	Arlington County levies a bank franchise tax (called a "Bank Stock Tax") at the maximum allowed local rate.
Fairfax	$0.80 per $100 of net capital	Fairfax County levies a bank franchise tax at the maximum allowed local rate.
Loudoun	$0.80 per $100 of net capital	Loudoun levies a bank franchise tax at the maximum allowed local rate.

3. Option Taxation, Local

None of the localities with sites in contention for this project (i.e., Counties of Arlington, Fairfax, and Loudoun, and the City of Alexandria) levy local option taxes.

B. Taxes and Tax Policy | Local

Detail the tax structures and policies of the local governments in your community, to include types of taxes, bases and application and exemptions and credits, including:

4. Property Taxation, Local
   a. Personal, including Equipment, Machinery or Tools
   b. Real

4. Property Taxation, Local

a. Personal, including Equipment, Machinery or Tools

All four localities with sites in contention for this project levy a tax on all tangible personal property located in their respective jurisdictions and used in trade or business. This includes business furniture, fixtures, equipment, machinery, tools, programmable computer equipment, and leased or owned motor vehicles (including boats and recreational vehicles). Vehicles are subject to annual personal property tax as long as they are garaged or parked in the locality, even if registered in another state.

For vehicles, specifically, Fairfax County's Department of Tax Administration (DTA) requires individuals and businesses to register their vehicles within 60 days of purchase or moving the vehicle into the county. This requirement is in addition to the requirement for registration with the Virginia Department of Motor Vehicles (DMV).

Filing requirements: All four localities with sites in contention for this project require businesses to file returns of business tangible personal property by May 1 for all property located in their jurisdictions as of January 1. These returns must be filed on an annual basis.

Assessment and depreciation: What follows is an overview of specifics for each locality with sites in contention for this project and how they handle assessment and depreciation. Often, cities and counties will treat machinery and tools or tangible personal property for manufacturers differently from tangible personal property for nonmanufacturers. In addition, certain counties and cities treat both vehicles and computer equipment differently. Information for these four categories of business personal property are reflected below for all four localities with sites in contention for this project.

Explanation for tangible personal property for nonmanufacturers

Alexandria	The City assesses all business personal property, except computer equipment, at 80% of the property's purchase cost in its first year of service. In each subsequent year of service, the assessed value declines by 10% until it reaches the minimum value of 20% of purchase costs in the seventh and later years of service.
Arlington	The County assesses all business personal property, except computer equipment, at 80% of the property's purchase cost in its first year of service. In each subsequent year of service, the assessed value declines by 10% until it reaches the minimum value of 20% of purchase costs in the seventh and later years of service.
Fairfax	The County assesses all business personal property, except computer equipment, at 80% of the property's purchase cost in its first year of service. In each subsequent year of service, the assessed value declines by 10% until it reaches the minimum value of 20% of purchase costs in the seventh and later years of service.
Loudoun	The County assesses all business personal property at 50% of the property's purchase cost in its first year of service. In each subsequent year of service, the assessed value declines by 10% until it reaches the minimum value of 10% of purchase costs.

Explanation for taxes on manufacturers' machinery and tools

Alexandria   The City assesses manufacturers' machinery and tools at 80% of the property's purchase cost in the first year of service. In each subsequent year of service, the assessed value declines by 10% until it reaches the minimum value of 20% of purchase costs in the seventh and later years of service.

Arlington   The County assesses manufacturers' machinery and tools at 80% of the property's purchase cost in the first year of service. In each subsequent year of service, the assessed value declines by 10% until it reaches the minimum value of 20% of purchase costs in the seventh and later years of service.

Fairfax   The County assesses manufacturers' machinery and tools at 80% of the property's purchase cost in the first year of service. In each subsequent year of service, the assessed value declines by 10% until it reaches the minimum value of 20% of purchase costs in the seventh and later years of service.

Loudoun   The County assesses manufacturers' machinery and tools at 50% of the property's purchase cost in the first year of service. In each subsequent year of service, the assessed value declines by 10% until it reaches the minimum value of 10% of purchase costs in the fifth and later years of service.

Explanation for special assessment ratios and depreciation schedules for computer equipment

Alexandria	The City assesses business computer equipment at 65% of the property's purchase cost in its first year of service, 45% the second year, 30% the third year, 20% the fourth year, and 5% in remaining years.
Arlington	The County assesses business computer equipment at 65% of the property's purchase cost in its first year of service, 45% the second year, 30% the third year, and 10% in remaining years.
Fairfax	The County assesses business computer equipment at 50% of the property's purchase cost in its first year of service, 35% the second year, 20% the third year, 10% the fourth year, and 2% in remaining years.
Loudoun	The County does not utilize different assessment ratios or depreciation schedules for computer equipment. Computer equipment is subject to the same ratios and schedules outlined for general business personal property above.

Taxes on automobiles and light vehicles[4]

	Value used	Pricing guides used	Assessment ratio
Alexandria	Other	N.A.D.A. Official Used Car and Older Used Car Guides, MacLean Hunter Market Reports, Black Book provided by Hearst Business Media, information from Car Dealerships, and DMV reports	100%
Arlington	Average Loan	N.A.D.A. Official Used Car and Older Used Car Guides	100%
Fairfax	Average Trade-In	N.A.D.A. Official Used Car and Older Used Car Guides, information from Car Dealerships, and DMV reports[5]	100%
Loudoun	Average Loan	N.A.D.A. Official Used Car and Older Used Car Guides, as well as DMV reports	100%

The Commonwealth of Virginia annually provides funding to localities in return for counties and cities providing property tax relief to individuals for property taxes levied on the first $20,000 of a vehicle's value. This property tax relief does not apply to vehicles that are predominantly used for business. Vehicles are considered as being used for business purposes if more than 50% of the mileage for the year is claimed as a business expense for federal income tax purposes or is reimbursed by an employer, if more than 50% of the depreciation associated with the vehicle is deducted as a business expense for federal income tax purposes, if the cost of the vehicle is expensed pursuant to Section 179 of the Internal Revenue Service Code, or if the vehicle is leased by an individual and the leasing company pays the tax without reimbursement from the individual. The percentage of tax relieved is determined by the number and value of vehicles in the county.

In Fairfax County, for example, the Commonwealth of Virginia provides $211.3 million annually to reduce the personal property tax paid by individuals on the first $20,000 of a vehicle's value. The percentage of tax relieved is impacted by the number and value of vehicles in the County. In FY18, state funds allowed for tax relief of 60.5% on the first $20,000 of a vehicle's value owned by an individual. Business vehicles are not eligible to receive the state's subsidy. In addition, in Fairfax, residents who are either 65 or older or permanently and totally disabled may receive tax relief from the tax on vehicles if their income is less than $22,000 (excluding the first $7,500) and they have combined net assets of $75,000 or less.

---

[4] For large trucks, the method of assessment and/or the assessment ratio may be different.
[5] Newer vehicles may be valued as a percentage of their MSRP.

Rates

Below is comprehensive information on property tax rates for the major categories of business tangible personal property discussed before.

Exceptions to these rates for each city and county are also discussed below.

Property tax rates (per $100 of assessed valuation)

	General	Machinery and tools (manufacturers)	Vehicles	Computer equipment	R&D equipment
Alexandria	$4.75	$4.50	$5.00	$4.75	$4.75
Arlington	$5.00	$5.00	$5.00	$5.00	$5.00
Fairfax	$4.57	$4.57	$4.57	$4.57	$4.57
Loudoun	$4.20	$2.75	$4.20	$4.20	$2.75

Exceptions to these rates include the following:

- In Loudoun County, aircraft and flight simulators as well as satellite manufacturing equipment are taxed at a rate of $0.010 per $100 of assessed value.

- In Loudoun County, eligible vehicles of fire services, rescue services, and sheriff's auxiliaries, eligible vehicles of permanently qualifying disabled veterans, property owned by homeowners' associations (excluding vehicles), and wild or exotic animals intended for public exhibition are taxed at a rate of $0.01 per $100 of assessed value. Vehicles of eligible elderly and handicapped individuals, as well as vehicles specially equipped for handicapped transport, are taxed at a rate of $2.10 per $100 of assessed value. Four-wheeled, electrically-powered, low speed vehicles are taxed at a rate of $1.00 per $100 of assessed value. Heavy construction machinery is taxed at a rate of $4.00 per $100 of assessed value. Wireless broadband equipment is taxed at a rate of $2.10 per $100 of assessed value.

- Fairfax County maintains a special subclass of property, which is taxed at a rate of $0.01 per $100 of assessed value. This subclass includes vehicles specifically equipped for the disabled, privately-owned vans used for a van pool, vehicles belonging to volunteer fire and rescue squad members, auxiliary police officers, and reserve deputy sheriffs, property owned by homeowners' associations, antique automobiles, boats, aircraft and flight simulators, and one vehicle owned by a fully disabled veteran.

- In Fairfax County, while mobile homes are considered personal property, they are taxed at the Real Estate tax rate (see below). Mobile homes in Loudoun County are similarly taxed at a rate of $1.13 per $100 of assessed value.

Proration
In all four localities with sites in contention for this project, there is no proration of business personal property taxes for business personal property that is disposed of or moved out of the county or city after January 1. Similarly, business personal property that comes to be located in a county or city in the region after January 1 is not taxable for that tax year. Business personal property taxes are due for all property located in the city or county as of January 1 of a given tax year.

The exception to this is the tax on vehicles. In all localities with sites in contention for this project, taxes on vehicles are prorated for the portion of the year the vehicle is located in the county, unless the vehicle is moved to a non-prorating county.

Payment
Below are brief notes on payment of business personal property taxes in all four localities, as well as payment due dates.

Alexandria: Payment of all business property taxes is due by October 5 and payments can be made at cash payment centers across Northern Virginia, by mail, or at any Sun Trust Bank location.

Arlington: Payment of all business property taxes is due by September 5 and payments may be made online.

Fairfax: Payment of all business property taxes is due by October 5 and payments may be made online.

Loudoun: Business tangible personal property taxes in Loudoun County are billed semiannually and are due to be paid to the Loudoun County Treasurer by June 5 and October 5 of each year.

Exemptions

The following table documents a number of exemptions to business personal property tax that have been adopted by the City of Alexandria and the Counties of Arlington, Fairfax, and Loudoun.

Alexandria	• Certified pollution control property • Solar equipment • Application software • Inventory for resale • Manufacturers' tangible personal property not used directly in the manufacturing process • Property of a few categories of nonprofit organizations
Arlington	• Application software • Inventory for resale • Manufacturers' tangible personal property not used directly in the manufacturing process • Property of a few categories of nonprofit organizations
Fairfax	• Any motor vehicle normally garaged, stored, or parked in the County whose owner is on full-time active duty in the military service • Motor vehicles owned by the State or any political subdivision or by the United States government • Vehicles owned and used by accredited consular or diplomatic officers of foreign governments, their family members, and employees, who are nationals of the state by which they are appointed and are not citizens of the United States • Solar equipment that is designed and used primarily for the collection and use of solar energy for water heating, space heating or cooling, or other applications which would otherwise require a conventional source of energy • Property owned by non-profit organizations
Loudoun	• Solar equipment that is designed and used primarily for the collection and use of solar energy for water heating, space heating or cooling, or other applications which would otherwise require a conventional source of energy • Property owned by non-profit organizations

b. Real

Taxes on real property (both residential and nonresidential) makes up a significant portion of overall tax revenues generated in all four localities. Below is information on local real estate taxes levied by each of the four jurisdictions with sites in contention for this project.

Assessment
The following local agencies in each of the four localities with sites in contention for this project are responsible for determining the assessed value for all real property in the respective city or counties.
- City of Alexandria: Office of Real Estate Assessments
- Arlington County: Department of Real Estate Assessments
- Fairfax County: Department of Tax Administration
- Loudoun County: Office of the Commissioner of the Revenue

The effective date for assessments of real property in all four localities is January 1 of each year, as required by law. Annual assessments are intended to keep pace with changes in the market. During subsequent reassessments, all property values are examined and adjustments are made where indicated by physical or market evidence. Assessments are intended to arrive at a determination of fair market value, defined as the amount of money a buyer would be willing to pay a seller for a property offered for sale in an open market, over a reasonable period of time, where both buyer and seller are well-informed and neither is under pressure to buy or sell.

As part of the assessment process, real estate transfers are analyzed annually and sales for previous years can be reviewed when warranted. Information is gathered from buyers, sellers, and real estate professionals. Selling prices are then compared to the assessed value to arrive at an assessment-sales ratio.

In some jurisdictions, fair market value is determined in a slightly different manner for commercial properties than it is for residential properties. In Fairfax, for example, fair market value is best determined by capitalizing the property's income into an estimate of value. This approach is commonly referred to as the income approach. This approach considers the ability of the property to earn income through rents, taking into account the operating expenses and allowing for vacancy and collection losses. The resulting net operating income is then capitalized into value with an appropriate rate to achieve a fair market value estimate. This value is then compared to the available market sales to determine if the property's assessment should change. Other approaches to value such as the cost approach and the direct sales approach are also used in the assessment process each year. The appraisal staff researches and analyzes the available sales information each year to determine the approach to value which will yield the best assessed values. Property owners are issued Commercial Income and Expense Survey Forms.

Assessment notices will provide commercial property owners with the deadline for submitting commercial income and expense information to the assessing agency.

Following the assessment of all real property in each jurisdiction, which must occur by January 1, each local agency responsible for assessments is required to send notice to property owners, including relevant information from the assessment. In some jurisdictions (e.g., Alexandria and Fairfax), this notice is mailed to property owners some time in February. This information includes the new and immediately prior assessed values of property, and the prior two years' values, total tax levies, and the percentage year-over-year changes in total taxes levied.

Virginia statute requires reassessments to be made at 100% of fair market value. However, because of rising real estate values and the fact that most localities actually reassess only periodically, actual assessment ratios are usually lower than 100%. Each year, the Virginia Department of Taxation examines real estate transactions, comparing real estate assessments effective on the date of the property's sale with the selling price of the property. The Department of Taxation's ratios of assessed values to selling prices for 2016 are given below for each of the four localities in contention for this project. They represent the best measures of actual assessment ratios among these four Virginia localities.

Assessment ratio (percentage of fair market value taxable)

Alexandria	97.3%
Arlington	95.7%
Fairfax	95.5%
Loudoun	96.4%

Appeal of property assessments

In each of the four localities, an appeals process exists for property owners who feel as though assessments are inaccurate or were conducted incorrectly. Appeals must be based on a contention that the assessed value does not reflect fair market value, a contention of a lack of uniformity, or errors in property description.

Below is a listing of the agencies in each locality that accept and hear assessment appeals, as well as the deadlines for submitting appeals in each of these jurisdictions:

- **City of Alexandria:** Property owners who contend that the assessed value does not represent the fair market value of their property or that the assessment is not equitable with comparable properties, or is otherwise erroneous, may request the Office of Real Estate Assessments review the assessment conducted. This is simply an internal review of the property's assessment performed by office staff. The deadline for requesting this review is March 15. In addition, property owners may officially appeal an assessment in a hearing before the Board of Equalization and Assessment Review to determine the value of the property. The deadline for filing an appeal with the Board is early June.

- **Arlington County:** Appeals are made directly to the Department of Real Estate Assessments and must be filed by March 1. The Department then sets up an inspection of the property and potentially additional meetings with the property owner to discuss additional information as needed. On the basis of this investigation, the original appraiser makes a recommendation and forwards this to his or her supervisor. The Supervisor must examine the review and decide whether or not to reaffirm the Appraiser's recommendation, submitting his or her findings to the Department's Director. The Director reviews the recommendations and makes a final determination in the case. If the owner still wishes to appeal to the Board of Equalization, they must do so by April 15. Following appeal to the Board of Equalization

- **Fairfax County:** Appeals are made directly to the Department of Tax Administration, which conducts a field inspection of the property, re-appraises the property under the guidance of a Supervising Appraiser. The Supervising Appraiser then forwards a recommendation to the Real Estate Division Assistant Director who then decides to either affirm, increase, or decrease the original assessment based on the analysis. Administrative appeal applications must be filed or postmarked by May 1. Property owners can appeal a second time to the Board of Equalization if they continue to contest the accuracy of their assessments.

- **Loudoun County:** Similar to the other jurisdictions, appeals of assessments for commercial property begin with a request for a review of the original assessment to the Office of the Commissioner of the Revenue. Applications for Review must be made by March 5. If, after the review, property owners continue to feel as though their assessment was conducted in error, is inequitable, or does not represent the fair market value of the property, they may appeal to the Board of Equalization, which must be submitted by June 1.

In any of these jurisdictions, if a property owner wishes to appeal the ruling of the Board of Equalization, he or she may file suit in local circuit court to contest the matter.

Rates

Below is a table which reflects the base property tax rates for real property in each of the four localities. Additional information about special tax district rates, which may apply depending on the location of the property, are given below.

Nominal tax rate (per $100 of assessed valuation)

Alexandria	$1.13
Arlington	$1.006
Fairfax	$1.13
Loudoun	$1.125

In altering rates from year to year, Loudoun County in particular targets adopting an equalizing rate (i.e., one which would keep homeowners' real tax bill constant, despite appreciation of property values or additional property being added to the market).

The County Board of Supervisors for Arlington, Fairfax, and Loudoun, and the Alexandria City Council have the ability to adjust the property tax rates for commercial real estate. This usually occurs in either April or May.

Using the assessment ratios calculated by the Department of Taxation above, it is possible to arrive at a slightly reduced, effective tax rate for property in each locality. This is only an estimate based on the Department's acknowledgement that assessments in each of these localities tend to include a slight depreciation against actual sales prices for real estate, but it provides a more refined idea of what property owners might actually pay in each locality. A table showing these adjusted, "effective" tax rates is given below.

"Effective" tax rate (per $100 of assessed valuation)

Alexandria	$1.10
Arlington	$0.96
Fairfax	$1.08
Loudoun	$1.08

Special taxing districts and tax rates

Below is a brief overview of the special taxing districts in each locality and the accompanying special tax rate over and above the base rate given above.

County/City	Special taxing district	Rate
Alexandria	Tier I Special Services District	$0.20
	Tier II Special Services District	$0.10
	Refuse Collection and Disposal Fee	$363 per property
Arlington	Transportation Capital Fund (for commercially-zoned properties)	$0.125
	Arlington Sanitary District	$0.013
	Rosslyn Business Improvement District	$0.078
	Crystal City Business Improvement District	$0.043
	Ballston Business Improvement Tax	$0.045
Fairfax	Commercial Transportation Tax District	$0.125
	Phase 2 Dulles Rail Transportation Improvement District (commercial property only)	$0.20
	Stormwater Service District	$0.03
	Infestation Prevention	$0.001
Loudoun	Dulles Rail Service Districts	$0.20
	Route 28 Highway Improvement	$0.18

Payment

Below are brief notes on payment of real property taxes in all four localities, as well as payment due dates.

Alexandria: Real estate taxes are billed and payable in two installments. The first bill is mailed in May and due by June 15. The second is mailed in October and due by November 15. Automatic debits and other online methods of payment are also offered by the city, in addition to payment by mail.

Arlington: Real estate taxes are billed and payable in two installments. The first is due by June 15 and the second is due by October 5. Payment can be made online through Arlington's Customer Assessment and Payment Portal (CAPP).

Fairfax: Payment of real estate or real property taxes is due in two installments, one on July 28 and one on December 5. Payment of taxes is accepted online or by mail.

Loudoun: Payment of real estate taxes is due in two installments. The first deadline is June 5 and the second deadline is December 5. Payment of taxes is accepted online or by mail.

B. Taxes and Tax Policy | Local

Detail the tax structures and policies of the local governments in your community, to include types of taxes, bases and application and exemptions and credits, including:

5. Sales and Use Taxation, Local
6. Surtaxes, Local
7. Other Taxation, Local

5. Sales and Use Taxation, Local

Other than property taxes, sales tax represents a significant source of revenue for all four localities with sites in contention for this project as well. As mentioned above, in the response to the question on state sales taxes, each of the four localities with sites in contention for this project, like all localities in Virginia, receive the revenues generated from 1% of an overall 6% state sales and use tax, as well as 1% of the overall 2.5% tax on food purchased for consumption in the home. All exemptions to the sales and use tax are set at the state level.

6. Surtaxes, Local

None of the four localities with sites in contention for this project levy surtaxes on top of what has already been described in the sales and use tax.

7. Other Taxation, Local

Business, Professional, and Occupational License (BPOL) Tax:
All four localities levy a licensing tax to all businesses engaged in a commercial enterprise in their jurisdictions. Companies without such a license may not lawfully engage in business. The license itself, often referred to as a permit or certificate of eligibility, must be renewed annually. Businesses, professionals, and occupations that meet all qualifications and legal requirements are eligible to obtain licenses upon application and payment of the license tax.

New businesses must file the business license application and pay taxes fairly soon (exact number of days varies by locality) upon beginning business. For existing businesses, renewal applications must be filed and taxes must be paid by March 1 of each license tax year.[6] March 1 is also the deadline for existing businesses to file for renewal of business licenses.

The tax is required for all businesses in the localities or self-employed professionals working on a full- or part-time basis, which have annual gross receipts in excess of $10,000. Individuals renting or leasing houses, apartments, part of their own residences, or other types of dwellings are also considered businesses. Businesses with gross receipts of $10,000 or less must still file for the license but are levied the tax. One exception to this is in Arlington where these businesses are still required to pay the licensing tax if they pay business personal property taxes in excess of $15.00.

The localities calculate gross receipts on either a cash or accrual basis, whichever is used by the individual companies for federal income tax purposes. Gross receipts are generally defined as the whole, entire, total receipts attributable to the license privilege, without deductions. In Alexandria, for example, no deduction may be made for the cost of the property sold, the cost of materials, labor, services, or other costs, interest, or discounts paid, or any expense whatsoever. Non-profit organizations are treated differently for licensing purposes, even if they have taxable activities. Some localities, however, allow for certain exclusions to be made in the calculation of a company's gross receipts. For example, Fairfax allows businesses to exclude gross receipts attributable to a taxable business activity conducted from another jurisdiction or state, Virginia retail sales and use tax or federal and state excise tax on motor vehicle fuels, and membership dues collected by non-profit organizations.

Before beginning business in a locality, companies must register with the Commonwealth by filing Form R-1 with the Virginia Department of Taxation. In applying to the Department of Taxation, companies are required to provide an accurate Business Locality Code (or FIPS Code). After registering with the Department of Taxation, businesses must also register with the State Corporation Commission (if registering as a corporation or limited partnership) or the Clerk of the Circuit Court (if registering as a general partnership or trade name). After these steps are taken, businesses must apply for the business license with the locality.

During the application process, new businesses are required to estimate the gross receipts to be obtained between the date of beginning business (or January 1 for existing businesses) and the end of the current license year (December 31). If business operations begin after January 1 or end before December 31, all localities prorate taxes owed in some form or fashion. For existing businesses, the estimation of gross receipts is based on the business' gross receipts from the previous tax year. The year's license tax is then computed on that estimate.

---

[6] In some localities, payments may be split, but all localities require at least some payment by March 1.

Each of the four localities treat bracket the rates and tax levels for businesses fairly differently, though all base bracketing on the size of the business (measured by the amount of a business' gross receipts in a given taxable year). Descriptions are given below for each locality, describing how they bracket and assign rates or flat fees to different types of businesses based on size.

Alexandria: For new businesses, in the first year of operation, there is no tax liability if gross receipts are less than $100,000 per year. A minimum annual license tax is $50 for businesses with an estimated gross receipts tax between $100,000 and $1,999,999, and businesses with estimated gross receipts of $2 million or above are assessed a percentage of their gross receipts. Existing businesses have no tax liability if gross receipts are less than $10,000. The minimum annual license tax is $50 for existing businesses with gross receipts of at least $10,000 but not more than $99,999; and businesses with gross receipts of $100,000 or above are assessed a tax calculated as a percentage of their gross receipts.

Arlington: There are no special tax rates for new businesses. All businesses with gross receipts less than $10,000 have no tax liability. The minimum annual license tax is $30 for businesses with gross receipts of more than $10,000 but not more than $50,000. Businesses with gross receipts between $50,001 and $100,000 are charged a flat tax of $50. Businesses with gross receipts exceeding $100,000 are assessed a tax calculated as a percentage of their gross receipts.

Arlington has instituted a special program targeting qualified technology businesses, defined specifically in Arlington's County Code as businesses in a qualified technology zone and with a primary function in the creation, design, and/or research and development of technology hardware or software.

After starting business, expanding, or relocating to Arlington, qualifying companies benefit from lower BPOL tax rates depending on their size:
- companies with anywhere from 1 to 499 employees will pay $0.18 per $100 of gross receipts
- companies with anywhere from 500 to 999 employees will pay $0.14 per $100 of gross receipts
- companies with more than 1,000 employees will pay $0.10 per $100 of gross receipts

Companies are only eligible for these reduced rates for a period of up to 10 years, including partial tax years.

Fairfax: There are no special tax rates for new businesses. All businesses with gross receipts less than $10,000 have no tax liability. The minimum annual license tax is $30 for businesses with gross receipts of more than $10,000 but not more than $50,000. Businesses with gross receipts between $50,001 and $100,000 are charged a flat tax of $50. Businesses with gross receipts exceeding $100,000 are assessed a tax calculated as a percentage of their gross receipts.

Loudoun: New businesses are levied a tax of $30, unless the new business is an out-of-county contractor, which pays a tax assessed as a percentage of its first year of gross receipts in Loudoun County. For businesses with gross receipts which do not exceed $200,000, the tax due is a flat $30. Businesses with gross receipts over $200,000 pay on a rate per $100 based on a particular business classification.

The table below provides the varying rates assessed for BPOL taxes, organized by business type and locality.

Business type	BPOL Tax Rates (per $100)			
	Alexandria	Arlington	Fairfax	Loudoun
Amusement and entertainment	$0.36	$0.25	$0.26	$0.21
Builders and developers	$0.16	$0.16	$0.05	$0.13
Business service occupations	$0.35	$0.35	$0.19	$0.17[7]
Coin machine operators		$0.35		
Consultants and specialized occupations			$0.31	
Contractors and contracting	$0.16	$0.16	$0.11	$0.13
Distress merchandise sale	$0.20			
Financial services	$0.35	$0.36	$0.19	$0.16
Gas and fueling stations		$0.10		
Hotels and motels		$0.36	$0.26	$0.23
Other businesses				$0.33
Parking garages and lots		$0.36		
Personal service occupations	$0.35	$0.35	$0.19	$0.23
Professional services occupations	$0.58	$0.36	$0.31	$0.33
Public service corporations				$0.50
Public utilities – telegraph	2%	$0.01		
Public utilities – telephone	$0.50	$0.50	$0.24	
Public utilities – water, heat, light, and power	0.5%	$0.05		
Real estate brokers		$0.36	$0.31	
Renting of commercial property	$0.35	$0.43		
Renting of residential property	$0.50	$0.28		
Renting by owner (commercial or residential)			$0.26	$0.16
Repair – personal and business services	$0.35	$0.35	$0.19	$0.16
Research and development business[8]			$0.31	
Restaurants and nightclubs		$0.20		
Retail merchants	$0.20	$0.20	$0.17	$0.17[9]
Short-term rentals		$0.20		
Soliciting agents	$0.20			
Wholesale merchants	$0.20	$0.08		
Wholesale merchants based on gross purchases	$0.05		$0.04	$0.05

In addition to the industries listed here, all localities designate a list of industries for which flat fees are assessed instead of a rate-based tax on gross receipts. These types of businesses generally include: Peddlers, massage parlors, fortune tellers, alcoholic beverages, carnivals, circuses, festivals, itinerant vendors, etc.

---

[7] Loudoun County has authorized separate rates for several particular types of business services operations (all per $100 of gross receipts), including aircraft leasing operations ($0.05), computer information online service providers ($0.15), global satellite-based imaging and mobile data service providers ($0.15), and federally appropriated research and development businesses ($0.03).

[8] In Fairfax County, certain federally-funded research and development prime contracts are eligible for the $0.03 per $100 rate upon approval by the Department of Tax Administration.

[9] Loudoun County has authorized a separate rate for retail merchants operating as certified daily short-term rentals ($0.20 per $100 of gross receipts).

For some localities, entire industries are exempt.

These industries are strictly specified in county or city codes and the exceptions are usually extremely narrow. Examples include newspapers, magazines, or publications published no more frequently than every three months in Arlington or resellers of hardware to federal or state government agencies in Fairfax. In Fairfax County, receipts of venture capital or other investment funds are excluded from taxation, except for commission and fees, are excluded from a company's calculation of its gross receipts. In addition, software development firms are exempt from paying the tax, while contractors, real estate brokers, and staffing firms have limitations set to the tax they must pay. Businesses located within city and town limits inside the county are also exempt from paying the county tax.

Meals, Food, and Beverage Taxes

Below are guidelines for the meals and beverage taxes levied by each of the four localities with sites in contention for this project. It should be noted that these rates are in addition to the full 6% state sales tax on alcoholic beverages and prepared hot foods sold for immediate consumption.

	Alexandria	Arlington	Fairfax	Loudoun[10]
Food and beverages	4%	4%	0%	0%
Alcoholic beverages	4%	4%	0%[11]	0%

It should be noted that food and beverage taxes in Arlington and Alexandria contain a number of exceptions in terms of which food and beverages are taxable. Notably, most meals and beverages sold for charitable, educational, benevolent, or religious purposes are exempt in Alexandria, while they are mostly not in Arlington. In Arlington, soft drinks served without food on premises and alcohol sold in sealed containers for off premises consumption are not subject to the tax. In addition, in Arlington, restaurants or caterers who prepare and sell meals specifically for commercial airlines charge a 2% food and beverage tax.

---

[10] There is no county-wide food and beverage tax in Loudoun County. Leesburg (3.5%), Purcellville (5%), and Lottesville (3%), Hamilton (4%), Hillsboro (4%), and Middleburg (4%) have each levied their own meals tax.
[11] Fairfax County has levied a 4% tax solely on wine sold in Alcohol Beverage Control (ABC) stores. Wine retail prices in the county also include a $0.40 per liter wine tax.

Cigarette Taxes

In addition to Virginia's cigarette excise tax, levied at the rate of 1.5 cents per cigarette (or 30 cents per pack for a standard pack of 20 cigarettes), several localities in Northern Virginia levy cigarette taxes over and above the Commonwealth's excise tax. Businesses that sell cigarettes are required (sometimes through the wholesaler or distributor) to remit the tax to the Northern Virginia Cigarette Tax Board, which then remits the tax to individual localities. Alexandria's tax is $1.15 per pack (regardless of the number of cigarettes included). Arlington's tax is $0.30 on each pack of 20 cigarettes and $0.375 on each pack containing 25 cigarettes. Fairfax's tax is $0.30 per pack of 20 cigarettes. There is no county-wide cigarette tax in Loudoun County, but individual towns have chosen to levy their own cigarette taxes.

Transient Occupancy Taxes

All counties and cities in Virginia have the authority to levy a transient occupancy tax on hotels, motels, boarding houses, travel campgrounds, and other facilities offering guest rooms rented out for continuous occupancy for fewer than 30 consecutive days. The rates for each locality's transient occupancy taxes are provided below:

	Alexandria[12]	Arlington	Fairfax	Loudoun
Transient occupancy tax rate	6.5%	5%	2%	5%
Tourism Tax	0%	0.25%	2%	0%
Regional transient occupancy tax rate[13]	2%	2%	2%	2%

Fairfax County exempts rentals paid to any hospital, medical clinic, convalescent home, or home for the aged. Rentals made to the federal government or diplomats are also exempt.

---

[12] The City of Alexandria also levies an additional tax, costing $1 per room per night.
[13] The regional transient occupancy tax is levied in all four Northern Virginia localities and is assessed at 2% of the room's charge. Revenue is remitted to the Northern Virginia Transportation Authority.

Vehicle Personal Property Tax and Registration Fees

All motor vehicles parked, stored, or garaged in any of the four localities with sites in contention for this project must be registered for annual personal property tax collections. Personal property taxes on vehicles are assessed based on the calendar year or any portion thereof during which a vehicle is liable for the tax. If a vehicle is subject to the taxes in a given locality for less than a full calendar year, the assessed value of the vehicle is usually prorated for the number of months for which the vehicle is actually subject to taxes.

Personal property tax rates for each of the four localities are given in the table below.

| | Tax rate per $100 of assessed value | | | |
	Alexandria	Arlington	Fairfax	Loudoun
Personal property tax on vehicles	$5.00	$5.00	$4.57	$4.20
Vehicles with specially-designed equipment for disabled persons	$3.55	$5.00	$4.57	$4.20

In most localities, students, government employees, diplomats, and members of the military are exempt from paying vehicle personal property tax. Vehicle owners are eligible for personal property tax relief under the Personal Property Tax Relief Act of 1998 (PPTRA). The Commonwealth of Virginia grants partial relief of the personal property tax levied on the first $20,000 of the assessed value for qualifying vehicles. The total amount issued by the Commonwealth in property tax relief has been capped at $950 million by the General Assembly beginning in 2006.

Below is a listing of the percentage (or percentage range) of property tax relief granted by each locality for personal property taxes levied on vehicles. Percentages of property tax relief are often determined by a vehicle's assessed value in a given tax year. Vehicles used for business purposes do not qualify for personal property tax relief.

Alexandria: Vehicles with an assessed value of $1,000 or less are provided with 100% property tax relief. These vehicles must still be registered, but no tax is due on them. Vehicles with an assessed value ranging between $1,001-$20,000 are eligible to receive 57% property tax relief (at a maximum of $570 per vehicle). Vehicles with an assessed value ranging between $20,001-$25,000 are eligible to receive 47% property tax relief (at a maximum of $470 per vehicle). Vehicles with an assessed value above $25,000 are eligible to receive 38% property tax relief (at a maximum of $380 per vehicle).

Arlington: Arlington offers 100% property tax relief on the first $1,000 of a vehicle's assessed value, 28% on the next $17,000 of the vehicle's assessed value, from $3,001-$20,000, and no relief for any portion of the vehicle's assessed value over the first $20,000 (which is standard across all four localities). Arlington offers slightly different rates of relief for qualifying clean-fuel vehicles (50% on the next $17,000 of assessed value from $3,001-$20,000), vehicles equipped and/or modified to transport physically disabled individuals (the same rate modification as for clean-fuel vehicles), and vehicles leased by an active duty member of the military and/or his or her spouse (100% property tax relief from the first $20,000 of assessed value).

Fairfax: Fairfax offers 100% property tax relief on vehicles with an assessed value at or under $1,000. For vehicles with higher assessed values and which weigh less than 7,501 pounds, Fairfax County provides property tax relief equitably to all residents based on availability of funds. In FY18, state funds allowed for tax relief of 60.5% of the first $20,000 of a vehicle's value. This amounted to $211.3 million provided by the Commonwealth and distributed by Fairfax in this year. Due to availability of funds and growth of population, the exact percentage fluctuates from year to year.

Loudoun: Loudoun offers 100% property tax relief on vehicles with an assessed value at or under $1,000. For vehicles with higher assessed values and which weigh less than 10,000 pounds, Loudoun County provides property tax relief equitably to all residents based on availability of funds. In 2017, state funds allowed for tax relief of roughly 40% of the first $20,000 of a vehicle's value.

Vehicle Decal or Registration Fee

Owners of all vehicles registered for personal property tax purposes in a given locality must also purchase and display a locality-specific decal or must pay a fee to have the vehicle properly registered in the locality. Generally, localities will prorate fees to account for vehicles being permanently moved in or outside the locality's jurisdiction.

Vehicle decal fees:

	Alexandria	Arlington	Fairfax[14]
Automobiles and motor homes	$33	$33	$33-38
Motorcycles	$21	$18	$18
Boat and utility trailers	$14.50	None	
Camping and travel trailers	$23	None	
Semi-trailer for vehicles	Varies[15]	None	
Private buses	$0.30 per 100 lbs., not less than $23	$33	$33-38
Private school buses or vehicles used for religious or educational purposes[16]	$23-28[17]	$33	$23-28
Business-owned (under 4,000 lbs.)	$33	$33	$33
Business owned (4,001-10,000 lbs.)	$38	$33	$38
Business-owned (10,001-12,000 lbs.)	$43	$33	$38
Business-owned (12,001-15,000 lbs.)	$48	$33	$38
Business-owned (15,001-18,000 lbs.)	$53	$33	$38
Business-owned (18,001-20,000 lbs.)	$58	$33	$38
Business-owned (20,001-22,000 lbs.)	$63	$33	$38
Business-owned (22,001-24,000 lbs.)	$68	$33	$38
Business-owned (24,001-26,000 lbs.)	$73	$33	$38
Business-owned (26,001-40,000 lbs.)	$83	$33	$38
Business-owned (40,000+ lbs.)	$98	$33	$38
Vehicles for hire[18]	$23-28	$33	$33-38
Taxis[19]	$33	$23	$23-28
Vehicles owned by National Guard personnel	$16.50	$33	$33-38

Please note, the Loudoun County Board of Supervisors has eliminated the decal requirement effective July 1, 2018, at which time a license fee of $25.00 will be assessed thereafter each tax year.

---

[14] Unless otherwise specified as a special class of vehicles, Fairfax County charges $33 for vehicles under 4,000 lbs. and $38 for vehicles over 4,000 lbs. In addition, the Town of Clifton, the Town of Herndon, and the Town of Vienna have established their own registration fees which do not align with the overall county fees.
[15] The City of Alexandria charges an $18 fee for a decal for a semi-trailer for vehicles weighing less than 1,500 lbs., $28.50 for a semi-trailer weighing 1,501-4,000 lbs., and $40 for a semi-trailer weighing 4,001 pounds or more.
[16] Fairfax County charges $23 for vehicles under 4,000 lbs. used exclusively for transportation to and from church, for the purpose of religious instruction, or church, for the purpose of divine worship and $28 for those over 4,000 lbs.
[17] The City of Alexandria charges $23 for the decal fee for private school buses weighing under 4,000 lbs. and $28 for a decal fee for private school buses weighing over 4,000 lbs.
[18] The City of Alexandria charges $23 for vehicles for hire weighing under 4,000 lbs. and $28 for those weighing over 4,000 lbs.
[19] Fairfax County charges $23 for taxis weighing under 4,000 lbs. and $28 for those weighing over 4,000 lbs.

Consumer Utility Fees/Taxes

All individuals or businesses which sell or furnish a utility service, including but not limited to public service corporations, must collect a tax on behalf of the locality from the purchaser of the service. Below are the details on the utility taxes levied by each locality, organized by type of utility and grouped by type of purchaser. All four localities levy taxes on some or all utilities purchased by both residential and nonresidential consumers.

Alexandria:

End User	Electricity	Natural Gas	Water
Residential	$1.12 + $0.012075 per kWh, not to exceed $3	$1.28 + $0.124444 per Ccf, not to exceed $3	15% of monthly water service charge
Commercial	$1.07 + $0.005071 per kWh	$1.42 + $0.050213 per Ccf	20% of first $150 of monthly water service charge
Industrial	$1.07 + $0.004131 per kWh	$1.42 + $0.050213 per Ccf	20% of first $150 of monthly water service charge
Charitable	$0.97 + $0.004610 per kWh, not to exceed $24	$1.42 + $0.050213 per Ccf, not to exceed $24	15% of first $150 monthly water service charge
Churches	$0.97 per month	$1.42 per month	Exempt

In Alexandria, federal agencies, diplomatic personnel, the Commonwealth and its political subdivisions, and the purchase of bottled water and service from the Alexandria Sanitation Authority are exempt from taxation.

Arlington:

End User	Electricity	Natural Gas
Residential	$0.005115 per kWh, not to exceed $3	$0.045 per Ccf, not to exceed $3
Commercial	$1.15 + $0.01043 per kWh	$0.845 + $0.06522 per Ccf
Industrial	$1.15 + $0.004131 per kWh	$0.845 + $0.06522 per Ccf

Arlington exempts federal, state, and political subdivision authorities from payment of utility taxes.

Fairfax:

End User	Electricity	Natural Gas
Residential	$0.56 + $0.00605 per kWh, not to exceed $4	$0.56 + $0.05259 per Ccf, not to exceed $4
Commercial	$1.15 + $0.00594 per kWh	$0.845 + $0.04794 per Ccf
Industrial	$1.15 + $0.00707 per kWh	$0.845 + $0.04794 per Ccf

Fairfax exempts buildings used for religious worship from the consumer utility tax if the building is exempt from property taxation.

Loudoun:

End User	Electricity	Natural Gas	Telephone	E 9-1-1
Residential	$0.63 + $0.006804 per kWh, not to exceed $2.70	$0.63 + $0.06485 per Ccf, not to exceed $2.70	5% sales and use tax	$0.75 per line per month
Commercial	$0.92 + $0.005393 per kWh	$0.0676 + $0.03034 per Ccf	5% sales and use tax	$0.75 per line per month

Short-Term (Daily) Rental Property Tax

The localities levy a tax on all individuals, partnerships, or corporations engaged in the business of renting daily rental property and who are classified as retail merchants for business license tax purposes. Such merchants, if they meet the definition of a short-term rental business, must collect from consumers a tax on all daily rentals in lieu of business personal property tax on the rental property.

For the purposes of this tax, localities generally define short-term rental businesses as those businesses that generate a minimum (usually 80%) of yearly gross proceeds from rental transactions involving rental periods of 92 consecutive days or less, including all extensions and renewals to the same person or a person affiliated with the lessee. The tax is in lieu of payment of a business personal property tax on rental inventory.

Tax rate (% of gross receipts)

	Alexandria	Arlington	Fairfax	Loudoun
Rate	1.5%	1%	1%	1%

Alexandria and Arlington exempt rentals of tangible personal property to the Commonwealth of Virginia, the United States, or any political subdivisions thereof, rentals of durable medical equipment, and rentals of tangible personal property which, if the subject of a sale, would be exempt from the state sales and use tax. Arlington also exempts rentals of trailers. Fairfax excludes property leased to a person affiliated with the lessor.

Recordation Tax

The Commonwealth of Virginia and localities in Northern Virginia levy a tax on the recordation of deeds, deeds of trust, mortgages, leases and contracts for the sale, assignment, transfer, conveyance or vestment of lands, tenements or realty.

Deeds generally

The Commonwealth tax rate for deeds generally is $0.25 per $100 of the purchase price or fair market value of the property conveyed, whichever is greater. The tax is paid by the purchaser or his or her designee. In addition to this state tax rate, the localities in Northern Virginia levy their own taxes over and above the Commonwealth tax.

Separately, Virginia levies a tax on the grantor of the property at the rate of $0.50 per $500 of the purchase price or fair market value of the property, excluding any liens of encumbrances. In the Northern Virginia region, the Commonwealth levies an additional grantor's tax of $0.15 per $100 of the purchase price or fair market value of the property, excluding any liens or encumbrances. Additional locality taxes are reflected in the table below.

The Commonwealth levies a recordation tax on bonds or other obligations secured by the deeds of trust or mortgages at a rate of $0.25 per $100. The state also levies a grantee refinance deed of trust tax at the rate of $0.18 per $100. Additional locality taxes are reflected in the table below.

Tax rate per $100

Taxpayer	Alexandria	Arlington	Fairfax	Loudoun
Purchaser	$0.083 (or 1/3 of state tax)	$0.083 (or 1/3 of state tax)	$0.083 (or 1/3 of state tax)	$0.083 (or 1/3 of state tax)

Fairfax County specifically exempts purchases and refinancing of property used exclusively for religious purposes from the recordation tax.

C. Projected Employee Tax Burden

Describe in detail the typical State/Commonwealth/Province and local tax burden that a company worker might anticipate if HQ2 were built on Site and the worker lived in your community. Assume the worker earns $100,000 annually, excluding benefits.

	Alexandria, VA	Arlington County, VA	Fairfax County, VA	Loudoun County, VA
Property Taxes (Per $100)				
Real Estate				
Nominal Rate (2017)	$1.13	$1.01	$1.13	$1.13
Median Sales Price (2016)*	$390,600	$390,600	$390,600	$390,600
Estimated Real Property Tax	*$4,414*	*$3,929*	*$4,414*	*$4,394*
Cars and Light Trucks				
Nominal Rate (2017)	$5.00	$5.00	$4.57	$4.20
Average Cost of Car (2016)**	$25,449	$25,449	$25,449	$25,449
Estimated Personal Property Tax	*$1,272*	*$1,272*	*$1,163*	*$1,069*
Virginia Personal Income Tax***	2% first $3,000	2% first $3,000	2% first $3,000	2% first $3,000
(Based on $100,000 salary after	3% next $2,000	3% next $2,000	3% next $2,000	3% next $2,000
deductions)	5% next $12,000	5% next $12,000	5% next $12,000	5% next $12,000
	5.75% on excess	5.75% on excess	5.75% on excess	5.75% on excess
Estimated Income Tax	*$5,267*	*$5,267*	*$5,267*	*$5,267*
Sales and Use Tax	6.00%	6.00%	6.00%	6.00%
Total Retail Sales Per Capita (2015)****	$14,017	$14,233	$12,909	$13,963
Estimated Sales Tax	*$841*	*$854*	*$775*	*$838*
Grocery and Food Tax	2.50%	2.50%	2.50%	2.50%
Average Spent on Groceries (2015)*****	$4,015	$4,015	$4,015	$4,015
Estimated Sales Tax	*$100*	*$100*	*$100*	*$100*
Motor Vehicle Sales Tax	4.15%	4.15%	4.15%	4.15%
Estimated Sales Tax	*$1,056*	*$1,056*	*$1,056*	*$1,056*
Excise Tax				
Gasoline Tax (Local)	$16.2 cents/gallon	$16.2 cents/gallon	$16.2 cents/gallon	$16.2 cents/gallon
Gallons used per driver (2015)*****	656	656	656	656
Estimated Gasoline Sales Tax	*$106*	*$106*	*$106*	*$106*
Utility Tax for Consumers				
Electric Tax Rate (monthly)	$1.12 + $0.012075/kWh ($3 max)	$0.005115/kWh in excess of 400 kWh ($3 max)	$0.56 + $0.00605/kWh ($4 max)	$0.63 + $0.006804/kWh ($2.70 max)
Estimated Electricity Tax	*$36*	*$36*	*$48*	*$32*
Natural Gas Tax Rate (monthly)	$1.28 + $0.124444/CCF ($3 max)	$0.045/CCF ($3 max)	$0.56 + $0.05259/CCF ($4 max)	$0.63 + $0.06485/CCF ($2.70 max)
Estimated Natural Gas Tax	*$36*	*$36*	*$48*	*$32*
Cable Tax Rate (monthly)	3.50%	3.50%	3.50%	3.50%
Average Cost of Cable 2017)	$1,272.00	$1,272.00	$1,272.00	$1,272.00
Estimated Cable Tax	*$45*	*$45*	*$45*	*$45*
Telephone Tax Rate	5.00%	5.00%	5.00%	5.00%
Estimated Telephone Tax	*$249*	*$249*	*$249*	*$249*
Recordation/Deeds Tax (per $100)	$0.33	$0.33	$0.33	$0.33
Estimated Recordation Tax	*$1,301*	*$1,301*	*$1,301*	*$1,301*
Restaurant/Admissions Tax				
Restaurant Tax Rate (2016)	4.00%	4.00%	No Tax	No Tax
Average Spent on Restaurants (2015)	$3,008	$3,008	$3,008	$3,008
Estimated Restaurant Tax	*$120*	*$120*	*No Tax*	*No Tax*
Admissions Tax Rate (2016)	10.00%	No Tax	No Tax	No Tax
Average Spent on Entertainment (2013)	$4,057	$4,057	$4,057	$4,057
(Based on $100,000 salary)				
Estimated Admissions Tax	*$406*	*No Tax*	*No Tax*	*No Tax*
Estimated Tax Burden	**$14,925**	**$13,997**	**$14,126**	**$14,165**

Source:
*National Association of Realtors; **Bureau of Labor Statistics; ***Virginia Department of Taxation; ****Department of Education; *****The Motley Fool

C. Other

Detail any State/Commonwealth/Province tax legislation that has been proposed over the last two years that would positively or negatively impact the business community.

In 2017, Virginia's business climate was ranked among the top 10 states in the nation by *Business Facilities* magazine (#4), *Forbes* (#5), CNBC (#7), and *Site Selection* magazine (#9).

Much of this is due to the commitment on the part of the Commonwealth's leadership to promote a strong, pro-business legal and tax environment. In both 2016 and 2017, all tax legislation opposed by the Virginia Chamber of Commerce failed in committee; nearly 60% of the legislation deemed pro-business by the Chamber passed and was signed by the Governor.

The tables below outline each item of tax-related legislation that has been proposed in the 2017 and 2018 sessions of the Virginia General Assembly (NOTE: the list of 2018 legislation was compiled and finalized on February 27, 2018). Descriptions are drawn directly from the General Assembly's online portal providing real-time updates on session activity.

2018 Regular Session of the Virginia General Assembly

Item	Status	Brief Description
Conformity with federal tax code		
HB 154	Signed by Governor	Commonwealth's tax code; conformity with federal law; emergency. Advances conformity of the Commonwealth's tax code with the federal tax code to February 9, 2018. The bill conforms only to certain provisions of Public Law 115-97, known as the "Tax Cuts and Jobs Act," that affect taxable years prior to 2018. The bill conforms to provisions creating an incentive for taxpayers to make contributions to hurricane relief efforts and certain other provisions. The bill also conforms to provisions of Public Law 115-123, known as the "Bipartisan Budget Act of 2018," that affect taxable year 2017. The bill contains an emergency clause and is identical to SB 230.
SB 230	Signed by Governor	Commonwealth's tax code; conformity with federal law; emergency. Advances conformity of the Commonwealth's tax code with the federal tax code to February 9, 2018. The bill conforms only to certain provisions of Public Law 115-97, known as the "Tax Cuts and Jobs Act," that affect taxable years prior to 2018. The bill conforms to provisions creating an incentive for taxpayers to make contributions to hurricane relief efforts and certain other provisions. The bill also conforms to provisions of Public Law 115-123, known as the "Bipartisan Budget Act of 2018," that affect taxable year 2017. The bill contains an emergency clause and is identical to HB 154.
Corporate Income Tax - Taxable Income		

HB 222	Reported from Senate Committee with substitute (2/27/18)	Income tax; modification for certain companies and subtraction for their employees; local grants. Establishes an income tax modification for companies that, from 2018 through 2028, either (i) invest at least $5 million in new capital investment in a qualified locality and create at least 10 jobs in a qualified locality or (ii) create at least 50 jobs in a qualified locality. Such companies are exempt from withholding for their employees that reside in a qualified locality. The bill defines qualified locality to include (i) the Counties of Bland, Buchanan, Dickenson, Lee, Russell, Scott, Smyth, Tazewell, and Wise or the Cities of Bristol and Norton, (ii) the Counties of Grayson, Henry, Halifax, or Pittsylvania or the Cities of Danville, Galax, or Martinsville, and (iii) the City of Petersburg. Qualified locality also includes certain real property owned or partly owned by such localities outside of their territorial boundaries. A company is eligible to claim the subtraction if it had no property or payroll in Virginia or if it had property or payroll in a qualified locality on the effective date of the act and remits its applicable estimated tax to the Tax Department. The bill authorizes the Commonwealth's Development Opportunity Fund and the Tobacco Indemnification and Community Revitalization Fund to issue grants or loans to eligible companies to pay their estimated tax liability. The bill defines applicable estimated tax as the sum of (i) the company's tax liability, calculated without allowing the modification, and (ii) the amount it would have been required to withhold for each of its employees that reside in a qualified locality. Generally, the amount of the modification is the value of the company's property and payroll in qualified localities. The bill provides similar modifications for industries that use different apportionment formulas including motor carriers, financial companies, construction companies, railway companies, manufacturing companies, retailers, and businesses with enterprise data center operations. The bill also establishes a subtraction from individual income tax for employees of an eligible company. Eligibility for the corporate and individual income tax subtractions shall continue for nine years following the year in which the company initially makes a modification to its apportionment formula. Continuing eligibility is contingent on the company maintaining its capital investment and jobs created in qualified localities. The bill permits (i) the Counties of Bland, Buchanan, Dickenson, Lee, Russell, Scott, Smyth, Tazewell, and Wise and the Cities of Bristol and Norton, (ii) the Counties of Grayson, Henry, Halifax, and Pittsylvania and the Cities of Danville, Galax, and Martinsville, and (iii) the City of Petersburg to provide grants and loans to companies that qualify for the modification provided by the bill. The bill also authorizes all industrial development authorities to provide grants and loans to such companies.

HB 798	Reported from Senate Committee (2/27/18)	Income tax; apportionment of sales for debt buyers. Requires debt buyers, defined in the bill, to apportion their income from the collection of debt to Virginia based on a single sales factor starting with taxable year 2019. Generally, under current law, a taxpayer apportions its income to Virginia based on the ratio of its property, payroll, and sales in Virginia to the same factors in all other states. Current law requires multistate businesses to apportion income from sales, other than sales of tangible personal property, to Virginia if the income-producing activity is performed only in Virginia or a greater proportion of the income-producing activity is performed in Virginia than in any other state. The bill provides that all income recovered on debt from a person or entity residing in the Commonwealth shall be apportioned to the Commonwealth for income tax purposes.
SB 883	In House Committee (2/27/18)	Income tax; modification for certain companies and subtraction for their employees; local grants. Establishes an income tax modification for companies that, from 2018 through 2028, either (i) invest at least $5 million in new capital investment in a qualified locality and create at least 10 jobs in a qualified locality or (ii) create at least 50 jobs in a qualified locality. Such companies are exempt from withholding for their employees that reside in a qualified locality. The bill defines qualified locality to include (i) the Counties of Bland, Buchanan, Dickenson, Giles, Lee, Russell, Scott, Smyth, Tazewell, Wise, and Wythe and the Cities of Bristol and Norton, (ii) the Counties of Carroll, Grayson, Henry, Halifax, Patrick, and Pittsylvania and the Cities of Danville, Galax, and Martinsville, and (iii) the City of Petersburg. Qualified locality also includes certain real property owned or partly owned by such localities outside of their territorial boundaries. A company is eligible to claim the subtraction if it had no property or payroll in Virginia or if it had property or payroll in a qualified locality on the effective date of the act and remits its applicable estimated tax to the Tax Department. The bill authorizes the Commonwealth's Development Opportunity Fund and the Tobacco Indemnification and Community Revitalization Fund to issue grants or loans to eligible companies to pay their estimated tax liability. The bill defines applicable estimated tax as the sum of (i) the company's tax liability, calculated without allowing the modification, and (ii) the amount it would have been required to withhold for each of its employees that reside in a qualified locality. Generally, the amount of the modification is the value of the company's property and payroll in qualified localities. The bill provides similar modifications for industries that use different apportionment formulas including motor carriers, financial companies, construction companies, railway companies, manufacturing companies, retailers, and businesses with enterprise data center operations. The bill also establishes a subtraction of up to $250,000 from individual income tax for employees of an eligible company. Eligibility for the corporate and individual income tax subtractions shall continue for nine years following the year in which the company initially makes a modification to its apportionment formula. Continuing eligibility is contingent on the company maintaining its capital investment and jobs created in qualified localities. The bill permits (i) the Counties of Bland, Buchanan, Dickenson, Lee, Russell,

Scott, Smyth, Tazewell, and Wise and the Cities of Bristol and Norton, (ii) the Counties of Carroll, Grayson, Henry, Halifax, and Pittsylvania and the Cities of Danville, Galax, and Martinsville, and (iii) the City of Petersburg to provide grants and loans to companies that qualify for the modification provided by the bill. The bill also authorizes all industrial development authorities to provide grants and loans to such companies

Economic development

| HB 242 | Left in/Failed to Pass Committee | Prohibition of public funding of professional sports teams. Prohibits the Commonwealth and any of its political subdivisions from spending public funds to provide incentives for professional sports teams, beginning January 1, 2019. The bill prohibits expenditures including appropriations, grants, loans, or tax incentives used to fund facilities or infrastructure improvements for professional sports teams. |

Employee Benefits

| HB 40 | Left in/Failed to Pass Committee | Family and Medical Leave Insurance Program. Entitles individuals to a family and medical leave insurance (FMLI) benefit payment for each month they are engaged in qualified caregiving, not to exceed 60 qualified caregiving days per year. Qualified caregiving means an activity, except regular employment, for a reason an individual is entitled to leave under the federal Family and Medical Leave Act of 1993. Benefits would amount to 66 percent of an individual's monthly wages, based on highest annual earnings from the prior three years, up to a capped monthly amount, and would be indexed to the national average wage index. If a person takes the maximum number of days, the benefits would range from a minimum benefit of $580 to a maximum benefit of $4,000 per month in the program's first year. To be eligible for benefits, an individual is required to (i) be insured for disability insurance benefits under the Social Security Act at the time his application is filed; (ii) have earned income from employment during the 12 months before filing the application; (iii) have filed an application for a FMLI benefit; and (iv) have been engaged in qualified caregiving, or anticipate being so engaged, during the 90-day period before the application is filed or within 30 days thereafter. The measure establishes the Family and Medical Leave Insurance Fund and requires FMLI benefit payments to be made only from this Fund. A tax of 0.2 percent is imposed on the wages received by every individual, and an excise tax of 0.2 percent of the wages paid in any calendar year by the employer with respect to their employment is imposed on employers. The measure has a delayed effective date of January 1, 2019. |

SB 736	Left in/Failed to Pass Committee	Paid family leave program. Establishes a program under which certain employees of employers with 50 or more employees will be eligible for paid family leave for days they take leave from work to provide qualified caregiving, which is defined in the bill as an activity for a reason for which an employee would be entitled to leave under the federal Family and Medical Leave Act. The amount of qualified caregiving days for which an eligible employee may receive paid family leave benefits is capped at 30 days in any year. Applications for benefits will be administered by the Virginia Employment Commission (VEC). The VEC is directed to adopt regulations within 280 days to establish (i) rates of payroll taxes to be paid by employers and employees to fund the program and (ii) the wage replacement payments under the paid family leave program, which are directed to be comparable to basic wage replacement benefits under the unemployment compensation program.
SB 934	In House Committee (2/27/18)	Benefits consortium. Authorizes an association organized as a nonstock corporation whose members are employers conducting business in the Commonwealth to sponsor a trust. The measure authorizes the trust, called a benefits consortium, to sell benefits plans to its members. To be eligible to sponsor a plan, the association is required to have been actively in existence for 10 years, have at least five members, have been formed for purposes other than obtaining or providing health benefits, and operate as a nonprofit entity. The benefits plans may provide medical prescription drug, dental, and vision coverage for the employees of members and the sponsoring association and their dependents. The benefits may be self-funded or purchased from an insurer. The benefits consortium will be a multiple employer welfare arrangement subject to the provisions of the federal Employee Retirement Income Security Act of 1974. The measure exempts the benefits consortium from state taxation and insurance regulations.

Excise taxes

HB 1338	Left in/Failed to Pass Committee	Cigarette tax; counties authorized to hold referendum. Authorizes the board of supervisors of any county to levy a tax on the sale or use of cigarettes if approved in a referendum. If approved, the tax shall not exceed five cents ($0.05) or the amount levied under state law, whichever is greater.
SB 510	Continued to 2019	Cigarette tax; counties authorized to hold referendum. Authorizes the board of supervisors of any county to levy a tax on the sale or use of cigarettes if approved in a referendum. If approved, the tax shall not exceed five cents ($0.05) or the amount levied under state law, whichever is greater.

Income Tax (Corporate and Individual) - Rates

SB 390	Left in/Failed to Pass Committee	Taxation in the Commonwealth. Makes numerous changes to the Commonwealth's tax structure. The bill creates two new income brackets for the calculation of individual income taxes and lowers the corporate income tax rate. The tax credit for low-income taxpayers would become refundable, and taxpayers would be prohibited from using the same donation to both receive certain tax credits and take a charitable deduction. The bill reinstates the estate tax. The state sales tax on food would be eliminated, and sales tax would be imposed on certain services and digital products. The transient occupancy tax would be imposed on the entire cost of the use or possession of the room. The tobacco tax would be raised.

Income Tax (Corporate and Individual) - Taxable Income

HB 365	Reported from Senate Committee (2/27/18)	Income tax subtraction; Virginia real estate investment trust income. Establishes an individual and corporate income tax subtraction for income attributable to an investment in a Virginia real estate investment trust, defined in the bill as an investment fund that is certified by the Department of Taxation as investing at least 90 percent of trust funds in Virginia and at least 40 percent of trust funds in localities that are either distressed or double distressed. The bill defines a distressed locality as one where the unemployment rate is greater than the statewide average or the poverty rate exceeds the statewide average. The bill defines a double distressed locality as one that satisfies both of the preceding criteria. An income tax subtraction would be available only for an investment made on or after January 1, 2019, but before December 31, 2024.
HB 200	Left in/Failed to Pass Committee	Individual income tax; subtraction for employer payment of qualified education loans. Establishes an individual income tax subtraction, beginning in taxable year 2018, for an unincorporated employer's contribution to the repayment of an employee's education loan. The bill provides that the maximum deduction per year shall be $5,250.

License tax

SB 255	Continued to 2019	License taxes; interest rate for certain refunds. Authorizes a locality to establish the interest rate for a tax refund due to a taxpayer's overstatement of gross receipts for purposes of determining the amount due for a business license tax at a rate lower than that required for interest on delinquent taxes. Current law requires that the interest rate for a refund of any local tax be at the same rate as set for interest on delinquent taxes

Local taxes

HB 119	Signed by Governor	Merchants' capital tax; classification. Creates a separate class for merchants' capital of any wholesaler reported as inventory that is located, and is normally located, in a structure that contains at least 100,000 square feet, with at least 100,000 square feet used solely to store such inventory. Any locality may impose a tax rate on such inventory that is lower than that applicable generally to merchants' capital.
HB 579	Left in/Failed to Pass Committee	Transient occupancy tax; state parks. Permits localities to impose transient occupancy taxes on transient room rentals and travel campgrounds in state parks.
HB 786	Continued to 2019	Local taxes; appeal to court. Provides that on an appeal to court for relief from local taxes, the taxpayer shall not be required to show that the assessment is a result of manifest error or disregard of controlling evidence, and on an appeal of the assessment of real or personal property that concerns an increase of more than 20 percent over the assessment for the same property for the prior tax year, except in cases of buildings constructed in the previous five years, the assessor shall have the burden of proving by a preponderance of the evidence that the assessment is correct. The bill also provides that an assessment constitutes manifest error if any one of three mistakes under current law was made. The bill contains technical amendments.
HB 981	Left in/Failed to Pass Committee	Local disposable paper and plastic bag tax. Authorizes any locality to impose a five-cent per bag tax on disposable paper bags or disposable plastic bags provided to customers by certain retailers, with certain bags being exempt from the tax. Revenues from the local tax would be collected by the Tax Commissioner and distributed monthly to the county or city imposing the tax to be used by such locality for pollution and litter mitigation. The bill requires each county or city adopting an ordinance to impose the tax to provide a certified copy of the ordinance to the Tax Commissioner at least six months prior to the date the tax is to become effective. The bill also allows every retailer that collects the tax to retain one cent of the five-cent tax.
HB 1390	Reported from Senate Committee with substitute (2/27/18)	Bond referenda; authorizing counties to make bond issuance contingent on enactment of a food and beverage tax. Authorizes counties to enact ordinances providing that bonds shall be repaid from food and beverage tax revenues. The bill provides that if a county enacts such an ordinance, the referendum submitted to the voters shall include as a single question the issuance of bonds and the enactment of a food and beverage tax. Under current law, the questions of bond issuance and tax enactment are submitted as separate ballot questions.

SB 115	Left in/Failed to Pass Committee	County food and beverage tax. Increases from four percent to eight percent the maximum tax that any county is authorized to impose on food and beverages sold by a restaurant, commonly referred to as the meals tax. The bill also removes the requirement that a county hold a referendum before imposing a meals tax.
SB 139	Left in/Failed to Pass Committee	Plastic bag tax in the Chesapeake Bay Watershed. Imposes a five-cent per bag tax on plastic bags provided to customers by certain retailers in localities located wholly within the Chesapeake Bay Watershed and directs revenues to be used to support the Chesapeake Bay Watershed Implementation Plan. The bill also allows every retailer that collects the tax to retain one cent of the five-cent tax.
SB 200	Left in/Failed to Pass Committee	Local government taxing authority. Equalizes municipal taxing authority and county taxing authority by granting a county the same authority available to a municipality through the uniform charter powers. The bill has a delayed effective date of July 1, 2019, prior which to the Division of Legislative Services is directed to convene a working group to develop recommendations as to what additional legislative changes are needed to effectuate the provisions of the bill.
SB 527	Incorporated into SB 115	County food and beverage tax. Increases from four percent to eight percent the maximum tax that any county is authorized to impose on food and beverages sold by a restaurant, commonly referred to as the meals tax. The bill also removes the requirement that a county hold a referendum before imposing a meals tax.

Multistate Tax Commission

HB 373	Sent to Governor (2/27/18)	Membership in Multistate Tax Commission. Requires the Tax Commissioner to take such steps as are necessary for Virginia to become an associate member of the Multistate Tax Commission and to participate in Multistate Tax Commission discussions and meetings concerning model tax legislation and uniform tax policies. The Commission was formed in 1967 and charged under the Multistate Tax Compact with, among other things, facilitating the proper determination of state and local tax liability of multistate taxpayers, promoting uniformity or compatibility in significant components of tax systems, facilitating taxpayer convenience and compliance in the filing of tax returns, and avoiding duplicative taxation.

Property tax

HB 787	Continued to 2019	Real property taxes; appeals to boards of equalization. Provides that (i) on appeal of a real property assessment to a board of equalization, the taxpayer shall not be required to show that the assessment is a result of manifest error or disregard of controlling evidence, and (ii) when the appeal involves an assessment of real property with an increase of more than 20 percent over the assessment for the same property for the prior tax year, except in cases of buildings constructed in the previous five years, the assessor shall have the burden of proving that the assessment is correct by a preponderance of the evidence.

HB 828	Signed by Governor	Personal property tax; computer equipment and peripherals used in data centers. Creates a separate classification of tangible personal property, for valuation purposes, for computer equipment and peripherals used in a data center. The classification specifies that the computer equipment and peripherals shall be valued by means of a percentage or percentages of original cost.
HB 1557	Continued to 2019	Intangible personal property; personal property used in manufacturing. Clarifies that personal property used directly in manufacturing in the locality in which the tax is assessed is classified as intangible personal property. Current law does not require that the property be used directly in manufacturing in order to be considered intangible, nor does it require that the property be in the locality in which manufacturing actually occurs.
HJ 98	In Senate Committee (2/27/18)	Study; Department of Taxation; appeals concerning valuation of business property; report. Requests the Department of Taxation to study and make recommendations on the appeals process for valuation of real and personal property of businesses.
SB 268	Sent to Governor (2/27/18)	Personal property tax; computer equipment and peripherals used in data centers. Creates a separate classification of tangible personal property, for valuation purposes, for computer equipment and peripherals used in a data center. The classification specifies that the computer equipment and peripherals shall be valued by means of a percentage or percentages of original cost.
SB 879	Continued to 2019	Intangible personal property; personal property used in manufacturing. Clarifies that personal property used directly in manufacturing in the locality in which the tax is assessed is classified as intangible personal property. Current law does not require that the property be used directly in manufacturing in order to be considered intangible, nor does it require that the property be in the locality in which manufacturing actually occurs.
SB 902	Reported from House Committee (2/27/18)	Property tax exemption for solar energy equipment and facilities. Amends the property tax exemption for solar equipment and facilities owned and operated by a business to apply to (i) certain projects at public and private colleges, (ii) certain projects equaling five megawatts or less, and (iii) 80 percent of the value of all other projects equaling 100 megawatts or less.
Sales and use tax		
HB 512	Left in/Failed to Pass Committee	Accelerated sales and use tax payments. Prohibits the accelerated collection of sales and use tax payments from retail merchants and other dealers who collect and return sales and use tax payments.
HB 529	Left in/Failed to Pass Committee	Sales and use tax revenue; distribution to certain localities. Adds the City of Chesapeake to those localities authorized to receive the state sales and use tax revenue attributable to certain public facilities. The

revenue must be used to pay the cost of bonds issued by the locality for construction of the facility.

HB 1051	Left in/Failed to Pass Committee	Communications sales and use tax; services subject to taxation. Applies the communications sales and use tax to services related to the streaming of audio and visual data, and prepaid calling. The bill also clarifies that the tax applies to communications services regardless of whether customers are charged a subscription fee, a periodic fee, or an actual usage fee.
HB 1104	Left in/Failed to Pass Committee	Sales and use tax refund; property to replace or repair business property damaged in a disaster. Permits any business to apply for a refund of sales and use taxes paid for any property purchased to replace or repair property that was damaged as a result of a disaster for which the Governor makes a declaration of a state of emergency on or after July 1, 2018. The refund applies only to property purchased no later than 180 days after the declaration of a state of emergency. The bill has an expiration date of July 1, 2022.
HB 1339	Left in/Failed to Pass Committee	Accelerated sales and use tax payments. Prohibits any requirement that a dealer remit accelerated sales and use tax payments, except as provided in a general appropriation act under the following circumstances: (i) if payments are required for dealers with sales of $15 million or less, such threshold may only be reduced by 10 percent the next year; (ii) if the Department of Taxation fails to notify dealers that accelerated payments are due at least nine months in advance, no penalty or interest may be assessed for late payments; and (iii) no penalty or interest may be assessed on a dealer subject to an accelerated payment due to a lowered threshold in the calendar year. If such accelerated payment is required in an appropriation act, a dealer may only be required to pay 90 percent of the dealer's sales and use tax liability for the previous June. The Department shall provide an online application for a dealer to apply for a hardship waiver. The bill prohibits requiring accelerated payments after June 30, 2020.
HB 1498	Left in/Failed to Pass Committee	Sales and use tax exemption. Provides a sales and use tax exemption on sales of tangible personal property by a nonprofit organization that is a volunteer organization and that is organized exclusively for the purpose of meeting the immediate, emergency, and temporary needs of low-income, unemployed, elderly, and handicapped individuals and families, including food, clothing, household items, and financial assistance, where existing agencies cannot do so.

SB 299	Left in/Failed to Pass Committee	Department of Taxation; reports on sales and use tax exemptions. Requires the Department of Taxation (the Department) to report annually to the Chairmen of the House Committee on Appropriations and the House and Senate Committees on Finance regarding the fiscal, economic, and policy impact of each sales and use tax exemption. The review of each exemption shall be performed on a rotation basis. No exemption shall be reviewed more than once every five years, but the exemption for computer purchases for use in data centers shall be reviewed every three years. Taxpayers that purchase tax-exempt computer equipment or enabling software for use in a data center shall submit to the Department every three years a list of its exempt purchases, including purchase prices, made during the previous three taxable years.
SB 746	Continued to 2019	Accelerated sales and use tax payments. Prohibits any requirement that a dealer remit accelerated sales and use tax payments, except as provided in a general appropriation act under the following circumstances: (i) if payments are required for dealers with sales of $15 million or less, such threshold may only be reduced by 10 percent the next year; (ii) if the Department of Taxation fails to notify dealers that accelerated payments are due at least nine months in advance, no penalty or interest may be assessed for late payments; and (iii) no penalty or interest may be assessed on a dealer subject to an accelerated payment due to a lowered threshold in the calendar year. If such accelerated payment is required in an appropriation act, a dealer may only be required to pay 90 percent of the dealer's sales and use tax liability for the previous June. The Department shall provide an online application for a dealer to apply for a hardship waiver. The bill prohibits requiring accelerated payments after June 30, 2020.
SB 814	Left in/Failed to Pass Committee	Aircraft sales and use tax; cap. Limits the maximum amount of sales tax and use tax due on an aircraft to $25,000.
SB 942	Reported from House Committee (2/27/18)	State sales and use tax; Historic Triangle. Creates a one percent state sales and use tax in the Historic Triangle. Fifty percent of the revenues will be used by the Williamsburg Area Destination Marketing Committee, through the creation of an office of marketing and promotion, to market, promote, and advertise the Historic Triangle as an overnight tourism destination, and the other 50 percent will be distributed to the localities in which the revenues were collected. The bill defines the Historic Triangle as the City of Williamsburg and the Counties of James City and York, an area of historic great historical significance that generates substantial employment and economic benefit for the Commonwealth. The bill removes the authority of these localities to impose the current $2 transient occupancy tax used to promote tourism in the area. The bill is contingent on the City of Williamsburg repealing recent ordinances raising the local transient occupancy, food and beverage, and admission taxes and will expire if the City of Williamsburg reinstates such taxes in the future.

Tax administration

SB 271	Reported from House Committee (2/27/18)	Notification of tax return data breach. Requires paid income tax return preparers to notify the Department of Taxation within a reasonable time period if they discover that an unauthorized person has accessed a taxpayer's return information. The bill defines return information and provides that it does not include publicly available information.

Tax credits

HB 54	Left in/Failed to Pass Committee	Renewable energy property tax credit. Establishes, beginning in taxable year 2018, a tax credit for renewable energy property placed in service. The bill defines "renewable energy property" as certain biomass equipment that uses renewable biomass resources, combined heat and power systems using waste heat to produce electricity or thermal or mechanical energy, certain geothermal equipment, hydroelectric generators located at existing dams or in free-flowing waterways, solar energy equipment, and wind equipment that is necessary for capturing and converting wind energy into electricity or mechanical power. The credit would equal 35 percent of the installed cost of the renewable energy property. However, the aggregate amount of credit allowed to each person for placing into service renewable energy property during the taxable year would not exceed $15,000. Only the ultimate consumer or user of the renewable energy property would be allowed to claim the credit. The credit would be required to be claimed in five equal annual installments beginning with the taxable year in which the property was placed in service. However, the amount claimed in a single year would not be allowed to exceed 50 percent of the person's total tax liability. The credit would expire and no further credit could be claimed if the renewable energy property was disposed of, taken out of service, or moved out of the Commonwealth during any of the installment years. The Department of Taxation would issue the tax credits. The Department would be authorized to issue $5 million in tax credits each fiscal year. Any unused credit could be carried forward for five taxable years. The credit would sunset in 2023.
HB 65	Left in/Failed to Pass Committee	Tax credits for employing individuals released from incarceration for conviction of a felony. Establishes, for taxable years beginning on and after January 1, 2018, but before January 1, 2023, an individual and corporate income tax credit for taxpayers hiring individuals released from incarceration into new jobs paying an annual salary of at least $50,000. The bill defines "individual released from incarceration" as a person who was released from incarceration for conviction of a felony within the five years immediately preceding the date on which the person was hired into the new job. The tax credit would equal $500 each year for five years for each such employee holding the new job continuously throughout the year. No credit would be allowed for any year in which the number of full-time employees of the taxpayer is less than the average annual number of full-time employees of the taxpayer in the immediately preceding three years.

HB129	Reported from Senate Committee (2/27/18)	Worker retraining tax credit; manufacturing instruction for students. Modifies the worker retraining tax credit by allowing credit to manufacturers conducting a manufacturing orientation, instruction, and training program that is (i) provided to students in grades six through 12, (ii) coordinated with the local school division and certified as qualified for tax credit by the Virginia Economic Partnership Development Authority, and (iii) conducted either at a plant or facility used by the manufacturer or at a public middle or high school in Virginia. The credit would equal 35 percent of the manufacturer's direct costs in providing the program, not to exceed $2,000 for any year.
HB 256	Left in/Failed to Pass Committee	Individual income tax credit and property tax exemption for substantial-capacity solar equipment. Provides an individual income tax credit and a mandatory property tax exemption for substantial-capacity solar equipment. The bill defines "substantial-capacity solar equipment" and requires a taxpayer to obtain certification from his local building department that such equipment is eligible for exemption. Current law provides an exemption for a broader category of solar energy equipment, facilities, or devices; however, such exemption is permissive for localities and may be partial or full. The bill provides that a person may claim an income tax credit for his costs associated with substantial-capacity solar equipment if he includes his certification with his tax return. The amount of the credit is the least of $10,000, 10 percent of the equipment's installed cost, or the person's tax liability. The bill provides that the Department of Taxation shall issue no more than $500,000 in credits per taxable year, and it does not allow taxpayers to carry unused credit forward. The credit sunsets after taxable year 2022.
HB 395	Left in/Failed to Pass Committee	Education Improvement Scholarships tax credits; eligibility requirements and scholarship amounts. Eliminates the requirement that a student must currently attend or have recently attended a public school in order to qualify for a scholarship from a scholarship foundation that provides tax-credit-derived scholarships. The bill increases the maximum annual scholarship amount from 100 percent of the per pupil amount distributed to the local school division as its share of standards of quality costs (i) for a student with a disability, to 400 percent of such amount, and (ii) for a student who has an autism spectrum disorder, to $26,000. The bill adds to the definition of "qualified educational expenses" expenditures made in connection to summer education.
HB 578	Left in/Failed to Pass Committee	Neighborhood Assistance Act tax credits; phase down credit value. Reduces the amount of the tax credit from 65 percent of the value of donations to neighborhood organizations for taxable years 2012 through 2017 to (i) 60 percent of such donations for taxable year 2018, (ii) 55 percent of such donations for taxable year 2019, and (iii) 50 percent of such donations for taxable years 2020 and thereafter.

HB 665	Reported from Senate Committee (2/27/18)	Coal tax credits. Reinstates the Virginia coal employment and production incentive tax credit. The credit, which expired on July 1, 2016, can be earned on and after January 1, 2018, but before January 1, 2023. The bill limits the aggregate amount of credits that may be allocated or claimed for the coal employment and production incentive tax credit in each fiscal year to $7.3 million. An electricity generator must file an application with the Department of Taxation each year to determine the amount of credits that it may claim or allocate, including credits earned in prior taxable years. If the total amount of credits earned in a taxable year exceeds $7.3 million, the Department of Taxation shall apportion the credits on a pro rata basis. The credits may be carried over for seven years. The bill also reestablishes the coalfield employment enhancement tax credit for metallurgical coal for taxable years beginning on and after January 1, 2018, but before January 1, 2023.
HB 700	Left in/Failed to Pass Committee	School readiness tax credits. Establishes tax credits for five categories of expenditures related to school readiness: (i) parents' child care expenses, (ii) child care providers' expenses, (iii) educational development expenses of child care facility directors and staff, (iv) expenses paid by a business to improve child care for its employees' children, and (v) business's donations to child care resource and referral agencies. The bill defines "child" to mean a child under the age of six and "child care facility" to mean a facility that primarily serves children under the age of six. The credits related to child care facilities are only available if the facility has attained at least level two in the Virginia Quality Rating and Improvement System administered by the Department of Social Services. If the facility has attained a higher level, the credits are increased by a multiplier. The bill directs the Department of Social Services to develop professional development criteria for child care facility directors and staff. The criteria shall consist of four levels representing cumulative advancement in child care skill and shall be designed to ensure high-quality child care in Virginia. The credit for educational development expenses is increased by a multiplier depending on the level that the director or staff has achieved. The credit for child care expenses is based on a percentage of the federal income tax credit for child care and other dependent care expenses; however, it is reduced based on the parent's income level. The credits for child care expenses, child care providers, and educational development expenses are refundable if the taxpayer's adjusted gross income is less than or equal to $25,000. Taxpayers that have an adjusted gross income over $25,000 may carry forward any unused credit for up to five years. The bill provides that the Department may recapture any credit issued, with interest, from any taxpayer that obtained the credit but failed to meet the applicable criteria.

HB 966	Continued to 2019	Taxation in the Commonwealth; income tax, sales tax, and credit for certain local taxes. Provides, for taxable years 2018 through 2022, a refundable credit against individual and corporate income taxes for a business's aggregate tax liability under the machinery and tools tax, the merchants' capital tax, and the business, professional, and occupational license (BPOL) tax. The bill imposes a sales tax on all services except business-to-business, educational, health care, and real estate services. The bill requires the Department of Taxation (the Department) to assert the Commonwealth's jurisdictional nexus to tax services to the maximum extent allowed by Virginia and federal law and requires any person that furnishes services valued at $5,000 or more during a calendar year to register with the Department as a dealer. The bill provides that food purchased for human consumption shall be exempt from state sales tax. Under current law, food purchased for human consumption is taxed at a reduced state rate of 1.5 percent and a local rate of 1 percent. The bill eliminates the lowest two income tax brackets by providing that, starting with taxable year 2019, there shall be no income tax imposed on income of $5,000 or less.
HB 1018	Left in/Failed to Pass Committee	Energy storage system tax credit. Establishes for taxable years 2018 through 2022 an income tax credit for a taxpayer's expenditures on an energy storage system. The bill defines energy storage system and provides that the credit shall not exceed the lesser of (i) $5,000 for a system on residential property or $75,000 for a system on commercial property, (ii) 30 percent of the system's total installed cost, or (iii) the taxpayer's tax liability. The bill directs the Department of Mines, Minerals, and Energy (the Department) to establish a process whereby taxpayers apply for certification that their expenditures are eligible for the credit. The bill limits the Department to issuing no more than $750,000 of tax credits, in aggregate, during a taxable year and directs the Department to approve credits in the order received. The bill prohibits taxpayers from carrying forward unused credit to later taxable years.
HB 1078	Left in/Failed to Pass Committee	Education Improvement Scholarships tax credits; limits eligibility to pre-kindergarten students. Provides that, on and after June 30, 2018, eligibility for Education Improvement Scholarships shall be limited to children in nonpublic pre-kindergarten programs and those students who received scholarships for the 2017 school year and each year thereafter. Under current law, tax credits are awarded for donations to foundations that use the funds to award scholarships to certain students in grades K-12 who attend nonpublic schools. The bill defines an eligible pre-kindergarten child and a nonpublic pre-kindergarten program and sets out several other curriculum and administrative requirements that must be met by a nonpublic pre-kindergarten program in order for children attending the program to be eligible to receive scholarships under the tax credit program. Under the bill, the Virginia Council for Private Education or the Virginia Early Childhood Foundation will certify nonpublic pre-kindergarten programs meeting such curriculum and administrative requirements. The bill provides that the maximum annual scholarship a child will receive is the lesser of his

actual educational expenses or the state share of the grant per child under the Virginia Preschool Initiative for the locality in which the child resides.

HB 1165	Left in/Failed to Pass Committee	Education Improvement Scholarships tax credits; pre-kindergarten eligibility. Expands the Education Improvement Scholarships tax credits program by including, as eligible scholarship recipients, children enrolled in, eligible to attend, or attending nonpublic pre-kindergarten programs. The maximum annual scholarship that a child will receive is the lesser of the child's actual educational expenses or the state share of the grant per child under the Virginia Preschool Initiative for the locality in which the child resides. Under current law, tax credits are awarded to individuals and businesses making donations to nonprofit scholarship foundations that use the donated funds to award scholarships to certain students in grades K-12 attending nonpublic schools. Eligible scholarship recipients are students in grades K-12 with a finalized individualized education program (IEP) in place or whose annual household income is not in excess of 300 percent of the federal poverty guidelines. The bill defines an eligible pre-kindergarten child and a nonpublic pre-kindergarten program and includes several other curriculum and administrative requirements that must be met by a nonpublic pre-kindergarten program in order for children attending the program to be eligible to receive scholarships under the tax credit program. Under the bill, the Virginia Council for Private Education, the Virginia Early Childhood Foundation, or the Virginia Department of Social Services will certify nonpublic pre-kindergarten programs meeting such curriculum and administrative requirements.
HB 1372	Sent to Governor (2/27/18)	Green job creation tax credit; extends sunset provision. Extends through taxable year 2019 the sunset date for the green job creation tax credit. Under current law, the credit expires for taxable years beginning on January 1, 2018.

HB 1382	Reported from Senate Committee (2/27/18)	Agricultural best management practices tax credit; refundability for corporations. Allows taxpayers to apply for a refund of corporate income tax credits received for expenditures for agricultural best management practices. Under current law, corporate income tax credits that exceed the taxpayer's tax liability are not refundable but may be carried forward for up to five years. Furthermore, under current law, individual income tax credits for expenditures related to agricultural best management practices are refundable.
HB 1575	Left in/Failed to Pass Committee	High school apprenticeship tax credit. Creates a tax credit for a business that hosts a junior or senior in a Richmond City high school as an apprentice for a semester during the 2018-2019 or 2019-2020 academic year. The business would receive a $2,500 credit per student, per semester. Participation in the program would be limited to 25 students.
SB 172	Left in/Failed to Pass Committee	Education Improvement Scholarships tax credits; pre-kindergarten eligibility. Expands the Education Improvement Scholarships tax credits program by including, as eligible scholarship recipients, children enrolled in or attending nonpublic pre-kindergarten programs. The maximum annual scholarship that a child admitted to, enrolled in, or attending a nonpublic pre-kindergarten program will receive is the lesser of the child's actual educational expenses or the state share of the grant per child under the Virginia Preschool Initiative for the locality in which the child resides. Under current law, tax credits are awarded to individuals and businesses making donations to nonprofit scholarship foundations using the donated funds to award scholarships to certain students in grades K-12 attending nonpublic schools. Eligible scholarship recipients are students in grades K-12 with a finalized individualized education program (IEP) in place or whose annual household income is not in excess of 300 percent of the federal poverty guidelines. The bill defines an eligible pre-kindergarten child and a nonpublic pre-kindergarten program and includes several other curriculum and administrative requirements that must be met by a nonpublic pre-kindergarten program in order for children attending the program to be eligible to receive scholarships under the tax credit program. Under the bill, VCPE or the Virginia Early Childhood Foundation will certify nonpublic pre-kindergarten programs meeting such curriculum and administrative requirements. The bill also reduces the penalty for failure to fully disburse all donations received from 200 percent of the difference between 90 percent of the value of the donations it received and the amount disbursed to 100 percent of the difference. This bill incorporates SB 553.

SB 378	Reported from House Committee (2/27/18)	Coal tax credits. Reinstates the Virginia coal employment and production incentive tax credit. The credit, which expired on July 1, 2016, can be earned on and after January 1, 2018, but before January 1, 2023. The bill limits the aggregate amount of credits that may be allocated or claimed for the coal employment and production incentive tax credit in each fiscal year to $7.3 million. An electricity generator must file an application with the Department of Taxation each year to determine the amount of credits that it may claim or allocate, including credits earned in prior taxable years. If the total amount of credits earned in a taxable year exceeds $7.3 million, the Department of Taxation shall apportion the credits on a pro rata basis. The credits may be carried over for seven years. The bill also reestablishes the coalfield employment enhancement tax credit for metallurgical coal for taxable years beginning on and after January 1, 2018, but before January 1, 2023.
SB 553	Incorporated into SB 172	Education improvement scholarships tax credits; eligibility; payout penalty. Expands the education improvement scholarships tax credits program by including as eligible scholarship recipients' children who are eligible to enter pre-kindergarten. In addition, the bill reduces the penalty for failure to fully disburse all donations received from 200 percent of the difference between 90 percent of the value of the donations it received and the amount disbursed to 100 percent of the difference. Under current law, foundations must spend at least 90 percent of donations on scholarships in order to avoid the penalty.
SB 573	Reported from House Committee (2/27/18)	Green job creation tax credit; extends sunset provision. Extends through taxable year 2020 the sunset date for the green job creation tax credit. Under current law, the credit expires for taxable years beginning on January 1, 2018.
SB 937	In House Committee (2/27/18)	High school apprenticeship tax credit. Creates a tax credit for a business that hosts a junior or senior in a Richmond City high school as an apprentice for a semester during the 2018-2019 or 2019-2020 academic year. The business would receive a $2,500 credit per student, per semester. Participation in the program would be limited to 25 students. The provisions of the bill are contingent on funding in a general appropriation act.

| SB 963 | Left in/Failed to Pass Committee | Tax credits for contributions to the Commonwealth Competitiveness Fund. Establishes the Commonwealth Competitiveness Fund (the Fund) and provides that a taxpayer shall receive an income tax credit in the amount of 90 percent of his contribution to the Fund starting with taxable year 2018. The bill provides that moneys in the fund shall be used for exclusively public purposes and shall be subject to appropriation by the General Assembly; however, 10 percent of the money in the Fund shall be reallocated to the at-risk add-on based on the concentration of children qualifying for the federal Free Lunch Program. The bill provides that the credit shall not exceed the taxpayer's tax liability. The bill provides that a taxpayer may not claim a charitable deduction for state tax purposes if he claims a credit under the bill for the same donation to the Commonwealth Competitiveness Fund. The bill provides that if a federal agency or federal court issues a public ruling, regulation, or court decision that limits the amount allowed for federal tax purposes under the federal charitable contribution deduction, the amount of the state credit shall be limited to the amount as determined by the federal agency or court. |

Tax exemptions

| HB 288 | Left in/Failed to Pass Committee | Recordation tax exemption; certain limited liability companies and limited or general partnerships. Provides a recordation tax exemption for deeds transferring property (i) to a subsidiary limited liability company or partnership from its parent limited liability company or partnership, (ii) from a subsidiary limited liability company or partnership to a parent limited liability company or partnership, (iii) to a limited liability company or partnership from a commonly owned limited liability company or partnership, or (iv) to a limited liability company or limited or general partnership from a commonly owned limited liability company or limited or general partnership, if the transaction qualifies for nonrecognition of gain or loss under the Internal Revenue Code and if the transfer is not a precursor or subsequent to a transfer of control of the assets of the company to avoid recordation taxes. |
| HB 471 | Left in/Failed to Pass Committee | State and local tax and regulatory exemptions for new small businesses. Exempts new small businesses from (i) payment of unemployment, sales and use, and local license taxes and (ii) certain registration and reporting requirements with the State Corporation Commission. The bill defines an eligible business as any business that has its principal place of business in the Commonwealth, has not been in existence for more than five years, and has fewer than six employees or has paid less than $5,000 for the purchase or lease of business personal property, including machinery and tools and merchants' capital, since its inception. |

Tax incentives

SB 297	Left in/Failed to Pass Committee	Incentives for communications companies; provision of wireless broadband services. Directs the Tobacco Region Revitalization Commission to award at least $10 million per year in grants to cover a portion of expenditures for the purchase and installation of wireless and broadband equipment to rural areas in the Southwest and Southside regions of the Commonwealth. The bill also establishes a sales tax exemption, which would be phased in over four years, for property sold or leased to a telecommunications company and used directly in the rendition of its public service.

Tax increment financing

HB 1092	Sent to Governor (2/27/18)	Tax increment financing; dredging projects. Specifies that dredging projects are development projects eligible for tax increment financing.

Tax withholding

HB 133	Left in/Failed to Pass Committee	Employees; exclusions for home healthcare workers and home adult day care service providers. Provides that home healthcare workers and home adult day care service providers are not employees for purposes of labor and employment laws, unemployment compensation, workers' compensation, and state income tax withholding.

Unemployment compensation

HB 82	Sent to Governor (2/27/18)	Workers' compensation; Uninsured Employer's Fund; financing tax. Repeals an enactment clause that provides that the maximum tax rate that may be assessed on insurance carriers or self-insured employers for the purpose of funding workers' compensation benefits that are awarded against uninsured employers from the Uninsured Employer's Fund will revert from 0.5 percent to 0.25 percent on July 1, 2018. Repealing the enactment will maintain the maximum rate at its current level of 0.5 percent.
HB 120	Left in/Failed to Pass Committee	Unemployment compensation; wage offset. Provides that the weekly unemployment benefit to which an eligible individual is entitled shall be reduced on a dollar-for-dollar basis by any wages in excess of $100 that the individual earns in that week. Currently such benefit is reduced dollar-for-dollar by wages in excess of $50 earned in a week.
HB 538	Sent to Governor (2/27/18)	Unemployment insurance tax reports and payments; filing. Requires the Department of Taxation to include on the its tax portal the ability for taxpayers to file unemployment insurance tax reports and pay unemployment insurance taxes through the same means used for other business tax filings.
HB 1293	Sent to Governor (2/27/18)	Unemployment compensation; penalty for failure to file reports. Increases the penalty, from $75 to $300, that the Virginia Employment Commission is required to assess an employer who fails to file a report required under Title 60.2 (Unemployment Compensation) with respect to wages or taxes.

HB 1391	Left in/Failed to Pass Committee	Unemployment compensation; overtime compensation. Excludes from the definition of wages any part of the individual's remuneration paid as overtime compensation required by § 207 of the federal Fair Labor Standards Act. The exclusion applies only for purposes of computing the weekly benefit amount based on an individual's earned wages for insured work subsequent to December 31, 2018.
SB 897	Continued to 2019	Workers' compensation; taxicab and executive sedan drivers. Provides that the exclusion from the definition of "employee" within the Virginia Workers' Compensation Act for taxicab or executive sedan drivers who are excluded from taxation under the Federal Unemployment Tax Act is not contingent upon whether evidence of the tax exemption is furnished to the Virginia Workers' Compensation Commission. The measure contains an emergency clause, and its provisions will be effective retroactive to December 31, 2017.
SB 968	Left in/Failed to Pass Committee	Unemployment compensation; failure of employing unit to furnish reports; penalty. Provides that an employing unit that willfully fails or refuses to furnish a report required by the Unemployment Compensation Act or to produce or permit the inspection or copying of records is liable to a penalty of $1,000 for each offense. The measure also authorizes the Commissioner of the Virginia Employment Commission to order an employer that continues to violate such provisions after three days' notice to cease and desist all business transactions and operations until it is found to be in compliance.

Utilities taxes - Rates

HB1573	Left in/Failed to Pass Committee	Electric utilities; rate adjustment based on changes in corporate income tax rates. Authorizes the State Corporation Commission to (i) adjust the rates of any investor-owned electric utility to recognize changes in the utility's cost of service associated with the reduction in federal corporate income tax rates resulting from a federal law and (ii) continue to determine income tax costs for any such utility. The measure has an emergency clause.

Item	Status	Brief Description
Conformity with federal tax code		
HB 154	Signed by Governor	Commonwealth's tax code; conformity with federal law; emergency. Advances conformity of the Commonwealth's tax code with the federal tax code to February 9, 2018. The bill conforms only to certain provisions of Public Law 115-97, known as the "Tax Cuts and Jobs Act," that affect taxable years prior to 2018. The bill conforms to provisions creating an incentive for taxpayers to make contributions to hurricane relief efforts and certain other provisions. The bill also conforms to provisions of Public Law 115-123, known as the "Bipartisan Budget Act of 2018," that affect taxable year 2017. The bill contains an emergency clause and is identical to SB 230.
SB 230	Signed by Governor	Commonwealth's tax code; conformity with federal law; emergency. Advances conformity of the Commonwealth's tax code with the federal tax code to February 9, 2018. The bill conforms only to certain provisions of Public Law 115-97, known as the "Tax Cuts and Jobs Act," that affect taxable years prior to 2018. The bill conforms to provisions creating an incentive for taxpayers to make contributions to hurricane relief efforts and certain other provisions. The bill also conforms to provisions of Public Law 115-123, known as the "Bipartisan Budget Act of 2018," that affect taxable year 2017. The bill contains an emergency clause and is identical to HB 154.
Corporate Income Tax – Taxable Income		
HB 222	Reported from Senate Committee with substitute (2/27/18)	Income tax; modification for certain companies and subtraction for their employees; local grants. Establishes an income tax modification for companies that, from 2018 through 2028, either (i) invest at least $5 million in new capital investment in a qualified locality and create at least 10 jobs in a qualified locality or (ii) create at least 50 jobs in a qualified locality. Such companies are exempt from withholding for their employees that reside in a qualified locality. The bill defines qualified locality to include (i) the Counties of Bland, Buchanan, Dickenson, Lee, Russell, Scott, Smyth, Tazewell, and Wise or the Cities of Bristol and Norton, (ii) the Counties of Grayson, Henry, Halifax, or Pittsylvania or the Cities of Danville, Galax, or Martinsville, and (iii) the City of Petersburg. Qualified locality also includes certain real property owned or partly owned by such localities outside of their territorial boundaries. A company is eligible to claim the subtraction if it had no property or payroll in Virginia or if it had property or payroll in a qualified locality on the effective date of the act and remits its applicable estimated tax to the Tax Department. The bill authorizes the Commonwealth's Development Opportunity Fund and the Tobacco Indemnification and Community Revitalization Fund to issue grants or loans to eligible companies to pay their estimated tax liability. The bill defines applicable estimated tax as the sum of (i) the company's tax liability, calculated without allowing the modification, and (ii) the amount it would have been required to withhold for each of its employees that reside in a qualified locality. Generally, the amount

Item	Status	Brief Description
		of the modification is the value of the company's property and payroll in qualified localities. The bill provides similar modifications for industries that use different apportionment formulas including motor carriers, financial companies, construction companies, railway companies, manufacturing companies, retailers, and businesses with enterprise data center operations. The bill also establishes a subtraction from individual income tax for employees of an eligible company. Eligibility for the corporate and individual income tax subtractions shall continue for nine years following the year in which the company initially makes a modification to its apportionment formula. Continuing eligibility is contingent on the company maintaining its capital investment and jobs created in qualified localities. The bill permits (i) the Counties of Bland, Buchanan, Dickenson, Lee, Russell, Scott, Smyth, Tazewell, and Wise and the Cities of Bristol and Norton, (ii) the Counties of Grayson, Henry, Halifax, and Pittsylvania and the Cities of Danville, Galax, and Martinsville, and (iii) the City of Petersburg to provide grants and loans to companies that qualify for the modification provided by the bill. The bill also authorizes all industrial development authorities to provide grants and loans to such companies.
HB 798	Reported from Senate Committee (2/27/18)	Income tax; apportionment of sales for debt buyers. Requires debt buyers, defined in the bill, to apportion their income from the collection of debt to Virginia based on a single sales factor starting with taxable year 2019. Generally, under current law, a taxpayer apportions its income to Virginia based on the ratio of its property, payroll, and sales in Virginia to the same factors in all other states. Current law requires multistate businesses to apportion income from sales, other than sales of tangible personal property, to Virginia if the income-producing activity is performed only in Virginia or a greater proportion of the income-producing activity is performed in Virginia than in any other state. The bill provides that all income recovered on debt from a person or entity residing in the Commonwealth shall be apportioned to the Commonwealth for income tax purposes.
SB 883	In House Committee (2/27/18)	Income tax; modification for certain companies and subtraction for their employees; local grants. Establishes an income tax modification for companies that, from 2018 through 2028, either (i) invest at least $5 million in new capital investment in a qualified locality and create at least 10 jobs in a qualified locality or (ii) create at least 50 jobs in a qualified locality. Such companies are exempt from withholding for their employees that reside in a qualified locality. The bill defines qualified locality to include (i) the Counties of Bland, Buchanan, Dickenson, Giles, Lee, Russell, Scott, Smyth, Tazewell, Wise, and Wythe and the Cities of Bristol and Norton, (ii) the Counties of Carroll, Grayson, Henry, Halifax, Patrick, and Pittsylvania and the Cities of Danville, Galax, and Martinsville, and (iii) the City of Petersburg. Qualified locality also includes certain real property owned or partly owned by such localities outside of their territorial boundaries. A company is eligible to claim the subtraction if it had no

Item	Status	Brief Description
		property or payroll in Virginia or if it had property or payroll in a qualified locality on the effective date of the act and remits its applicable estimated tax to the Tax Department. The bill authorizes the Commonwealth's Development Opportunity Fund and the Tobacco Indemnification and Community Revitalization Fund to issue grants or loans to eligible companies to pay their estimated tax liability. The bill defines applicable estimated tax as the sum of (i) the company's tax liability, calculated without allowing the modification, and (ii) the amount it would have been required to withhold for each of its employees that reside in a qualified locality. Generally, the amount of the modification is the value of the company's property and payroll in qualified localities. The bill provides similar modifications for industries that use different apportionment formulas including motor carriers, financial companies, construction companies, railway companies, manufacturing companies, retailers, and businesses with enterprise data center operations. The bill also establishes a subtraction of up to $250,000 from individual income tax for employees of an eligible company. Eligibility for the corporate and individual income tax subtractions shall continue for nine years following the year in which the company initially makes a modification to its apportionment formula. Continuing eligibility is contingent on the company maintaining its capital investment and jobs created in qualified localities. The bill permits (i) the Counties of Bland, Buchanan, Dickenson, Lee, Russell, Scott, Smyth, Tazewell, and Wise and the Cities of Bristol and Norton, (ii) the Counties of Carroll, Grayson, Henry, Halifax, and Pittsylvania and the Cities of Danville, Galax, and Martinsville, and (iii) the City of Petersburg to provide grants and loans to companies that qualify for the modification provided by the bill. The bill also authorizes all industrial development authorities to provide grants and loans to such companies.

Economic development

Item	Status	Brief Description
HB 242	Left in/Failed to Pass Committee	Prohibition of public funding of professional sports teams. Prohibits the Commonwealth and any of its political subdivisions from spending public funds to provide incentives for professional sports teams, beginning January 1, 2019. The bill prohibits expenditures including appropriations, grants, loans, or tax incentives used to fund facilities or infrastructure improvements for professional sports teams.

Employee Benefits

Item	Status	Brief Description
HB 40	Left in/Failed to Pass Committee	Family and Medical Leave Insurance Program. Entitles individuals to a family and medical leave insurance (FMLI) benefit payment for each month they are engaged in qualified caregiving, not to exceed 60 qualified caregiving days per year. Qualified caregiving means an activity, except regular employment, for a reason an individual is entitled to leave under the federal Family and Medical Leave Act of 1993. Benefits would amount to 66 percent of an individual's monthly wages, based on highest annual earnings from the prior three years, up to a capped monthly amount, and would be indexed to the national average wage index. If a person takes the maximum number of days, the benefits would range from a minimum benefit of $580 to a maximum benefit of $4,000 per month in the program's first year. To be eligible for benefits, an individual is required to (i) be insured for disability insurance benefits under the Social Security Act at the time his application is filed; (ii) have earned income from employment during the 12 months before filing the application; (iii) have filed an application for a FMLI benefit; and (iv) have been engaged in qualified caregiving, or anticipate being so engaged, during the 90-day period before the application is filed or within 30 days thereafter. The measure establishes the Family and Medical Leave Insurance Fund and requires FMLI benefit payments to be made only from this Fund. A tax of 0.2 percent is imposed on the wages received by every individual, and an excise tax of 0.2 percent of the wages paid in any calendar year by the employer with respect to their employment is imposed on employers. The measure has a delayed effective date of January 1, 2019.
SB 736	Left in/Failed to Pass Committee	Paid family leave program. Establishes a program under which certain employees of employers with 50 or more employees will be eligible for paid family leave for days they take leave from work to provide qualified caregiving, which is defined in the bill as an activity for a reason for which an employee would be entitled to leave under the federal Family and Medical Leave Act. The amount of qualified caregiving days for which an eligible employee may receive paid family leave benefits is capped at 30 days in any year. Applications for benefits will be administered by the Virginia Employment Commission (VEC). The VEC is directed to adopt regulations within 280 days to establish (i) rates of payroll taxes to be paid by employers and employees to fund the program and (ii) the wage replacement payments under the paid family leave program, which are directed to be comparable to basic wage replacement benefits under the unemployment compensation program.

Item	Status	Brief Description
SB 934	In House Committee (2/27/18)	Benefits consortium. Authorizes an association organized as a nonstock corporation whose members are employers conducting business in the Commonwealth to sponsor a trust. The measure authorizes the trust, called a benefits consortium, to sell benefits plans to its members. To be eligible to sponsor a plan, the association is required to have been actively in existence for 10 years, have at least five members, have been formed for purposes other than obtaining or providing health benefits, and operate as a nonprofit entity. The benefits plans may provide medical prescription drug, dental, and vision coverage for the employees of members and the sponsoring association and their dependents. The benefits may be self-funded or purchased from an insurer. The benefits consortium will be a multiple employer welfare arrangement subject to the provisions of the federal Employee Retirement Income Security Act of 1974. The measure exempts the benefits consortium from state taxation and insurance regulations.

Excise taxes

Item	Status	Brief Description
HB 1338	Left in/Failed to Pass Committee	Cigarette tax; counties authorized to hold referendum. Authorizes the board of supervisors of any county to levy a tax on the sale or use of cigarettes if approved in a referendum. If approved, the tax shall not exceed five cents ($0.05) or the amount levied under state law, whichever is greater.
SB 510	Continued to 2019	Cigarette tax; counties authorized to hold referendum. Authorizes the board of supervisors of any county to levy a tax on the sale or use of cigarettes if approved in a referendum. If approved, the tax shall not exceed five cents ($0.05) or the amount levied under state law, whichever is greater.

Income Tax (Corporate and Individual) - Rates

Item	Status	Brief Description
SB 390	Left in/Failed to Pass Committee	Taxation in the Commonwealth. Makes numerous changes to the Commonwealth's tax structure. The bill creates two new income brackets for the calculation of individual income taxes and lowers the corporate income tax rate. The tax credit for low-income taxpayers would become refundable, and taxpayers would be prohibited from using the same donation to both receive certain tax credits and take a charitable deduction. The bill reinstates the estate tax. The state sales tax on food would be eliminated, and sales tax would be imposed on certain services and digital products. The transient occupancy tax would be imposed on the entire cost of the use or possession of the room. The tobacco tax would be raised.

Income Tax (Corporate and Individual) - Taxable Income

Item	Status	Brief Description
HB 365	Reported from Senate Committee (2/27/18)	Income tax subtraction; Virginia real estate investment trust income. Establishes an individual and corporate income tax subtraction for income attributable to an investment in a Virginia real estate investment trust, defined in the bill as an investment fund that is certified by the Department of Taxation as investing at least 90 percent of trust funds in Virginia and at least 40 percent of trust funds in localities that are either distressed or double distressed. The bill defines a distressed locality as one where the unemployment rate is greater than the statewide average or the poverty rate exceeds the statewide average. The bill defines a double distressed locality as one that satisfies both of the preceding criteria. An income tax subtraction would be available only for an investment made on or after January 1, 2019, but before December 31, 2024.
HB 200	Left in/Failed to Pass Committee	Individual income tax; subtraction for employer payment of qualified education loans. Establishes an individual income tax subtraction, beginning in taxable year 2018, for an unincorporated employer's contribution to the repayment of an employee's education loan. The bill provides that the maximum deduction per year shall be $5,250.

SB 255	Continued to 2019	License taxes; interest rate for certain refunds. Authorizes a locality to establish the interest rate for a tax refund due to a taxpayer's overstatement of gross receipts for purposes of determining the amount due for a business license tax at a rate lower than that required for interest on delinquent taxes. Current law requires that the interest rate for a refund of any local tax be at the same rate as set for interest on delinquent taxes.

		Local taxes
HB 119	Signed by Governor	Merchants' capital tax; classification. Creates a separate class for merchants' capital of any wholesaler reported as inventory that is located, and is normally located, in a structure that contains at least 100,000 square feet, with at least 100,000 square feet used solely to store such inventory. Any locality may impose a tax rate on such inventory that is lower than that applicable generally to merchants' capital.
HB 579	Left in/Failed to Pass Committee	Transient occupancy tax; state parks. Permits localities to impose transient occupancy taxes on transient room rentals and travel campgrounds in state parks.
HB 786	Continued to 2019	Local taxes; appeal to court. Provides that on an appeal to court for relief from local taxes, the taxpayer shall not be required to show that the assessment is a result of manifest error or disregard of controlling evidence, and on an appeal of the assessment of real or personal property that concerns an increase of more than 20 percent over the assessment for the same property for the prior tax year, except in cases of buildings constructed in the previous five years, the assessor shall have the burden of proving by a preponderance of the evidence that the assessment is correct. The bill also provides that an assessment constitutes manifest error if any one of three mistakes under current law was made. The bill contains technical amendments.
HB 981	Left in/Failed to Pass Committee	Local disposable paper and plastic bag tax. Authorizes any locality to impose a five-cent per bag tax on disposable paper bags or disposable plastic bags provided to customers by certain retailers, with certain bags being exempt from the tax. Revenues from the local tax would be collected by the Tax Commissioner and distributed monthly to the county or city imposing the tax to be used by such locality for pollution and litter mitigation. The bill requires each county or city adopting an ordinance to impose the tax to provide a certified copy of the ordinance to the Tax Commissioner at least six months prior to the date the tax is to become effective. The bill also allows every retailer that collects the tax to retain one cent of the five-cent tax.

HB 1390	Reported from Senate Committee with substitute (2/27/18)	Bond referenda; authorizing counties to make bond issuance contingent on enactment of a food and beverage tax. Authorizes counties to enact ordinances providing that bonds shall be repaid from food and beverage tax revenues. The bill provides that if a county enacts such an ordinance, the referendum submitted to the voters shall include as a single question the issuance of bonds and the enactment of a food and beverage tax. Under current law, the questions of bond issuance and tax enactment are submitted as separate ballot questions.
SB 115	Left in/Failed to Pass Committee	County food and beverage tax. Increases from four percent to eight percent the maximum tax that any county is authorized to impose on food and beverages sold by a restaurant, commonly referred to as the meals tax. The bill also removes the requirement that a county hold a referendum before imposing a meals tax.
SB 139	Left in/Failed to Pass Committee	Plastic bag tax in the Chesapeake Bay Watershed. Imposes a five-cent per bag tax on plastic bags provided to customers by certain retailers in localities located wholly within the Chesapeake Bay Watershed and directs revenues to be used to support the Chesapeake Bay Watershed Implementation Plan. The bill also allows every retailer that collects the tax to retain one cent of the five-cent tax.
SB 200	Left in/Failed to Pass Committee	Local government taxing authority. Equalizes municipal taxing authority and county taxing authority by granting a county the same authority available to a municipality through the uniform charter powers. The bill has a delayed effective date of July 1, 2019, prior which to the Division of Legislative Services is directed to convene a working group to develop recommendations as to what additional legislative changes are needed to effectuate the provisions of the bill.
SB 527	Incorporated into SB 115	County food and beverage tax. Increases from four percent to eight percent the maximum tax that any county is authorized to impose on food and beverages sold by a restaurant, commonly referred to as the meals tax. The bill also removes the requirement that a county hold a referendum before imposing a meals tax.

Multistate Tax Commission

HB 373	Sent to Governor (2/27/18)	Membership in Multistate Tax Commission. Requires the Tax Commissioner to take such steps as are necessary for Virginia to become an associate member of the Multistate Tax Commission and to participate in Multistate Tax Commission discussions and meetings concerning model tax legislation and uniform tax policies. The Commission was formed in 1967 and charged under the Multistate Tax Compact with, among other things, facilitating the proper determination of state and local tax liability of multistate taxpayers, promoting uniformity or compatibility in significant components of tax systems, facilitating taxpayer convenience and compliance in the filing of tax returns, and avoiding duplicative taxation.

Property tax

HB 787	Continued to 2019	Real property taxes; appeals to boards of equalization. Provides that (i) on appeal of a real property assessment to a board of equalization, the taxpayer shall not be required to show that the assessment is a result of manifest error or disregard of controlling evidence, and (ii) when the appeal involves an assessment of real property with an increase of more than 20 percent over the assessment for the same property for the prior tax year, except in cases of buildings constructed in the previous five years, the assessor shall have the burden of proving that the assessment is correct by a preponderance of the evidence.
HB 828	Signed by Governor	Personal property tax; computer equipment and peripherals used in data centers. Creates a separate classification of tangible personal property, for valuation purposes, for computer equipment and peripherals used in a data center. The classification specifies that the computer equipment and peripherals shall be valued by means of a percentage or percentages of original cost.
HB 1557	Continued to 2019	Intangible personal property; personal property used in manufacturing. Clarifies that personal property used directly in manufacturing in the locality in which the tax is assessed is classified as intangible personal property. Current law does not require that the property be used directly in manufacturing in order to be considered intangible, nor does it require that the property be in the locality in which manufacturing actually occurs.
HJ 98	In Senate Committee (2/27/18)	Study; Department of Taxation; appeals concerning valuation of business property; report. Requests the Department of Taxation to study and make recommendations on the appeals process for valuation of real and personal property of businesses.
SB 268	Sent to Governor (2/27/18)	Personal property tax; computer equipment and peripherals used in data centers. Creates a separate classification of tangible personal property, for valuation purposes, for computer equipment and peripherals used in a data center. The classification specifies that the

computer equipment and peripherals shall be valued by means of a percentage or percentages of original cost.

SB 879	Continued to 2019	Intangible personal property; personal property used in manufacturing. Clarifies that personal property used directly in manufacturing in the locality in which the tax is assessed is classified as intangible personal property. Current law does not require that the property be used directly in manufacturing in order to be considered intangible, nor does it require that the property be in the locality in which manufacturing actually occurs.
SB 902	Reported from House Committee (2/27/18)	Property tax exemption for solar energy equipment and facilities. Amends the property tax exemption for solar equipment and facilities owned and operated by a business to apply to (i) certain projects at public and private colleges, (ii) certain projects equaling five megawatts or less, and (iii) 80 percent of the value of all other projects equaling 100 megawatts or less.

Sales and use tax

HB 512	Left in/Failed to Pass Committee	Accelerated sales and use tax payments. Prohibits the accelerated collection of sales and use tax payments from retail merchants and other dealers who collect and return sales and use tax payments.
HB 529	Left in/Failed to Pass Committee	Sales and use tax revenue; distribution to certain localities. Adds the City of Chesapeake to those localities authorized to receive the state sales and use tax revenue attributable to certain public facilities. The revenue must be used to pay the cost of bonds issued by the locality for construction of the facility.
HB 1051	Left in/Failed to Pass Committee	Communications sales and use tax; services subject to taxation. Applies the communications sales and use tax to services related to the streaming of audio and visual data, and prepaid calling. The bill also clarifies that the tax applies to communications services regardless of whether customers are charged a subscription fee, a periodic fee, or an actual usage fee.
HB 1104	Left in/Failed to Pass Committee	Sales and use tax refund; property to replace or repair business property damaged in a disaster. Permits any business to apply for a refund of sales and use taxes paid for any property purchased to replace or repair property that was damaged as a result of a disaster for which the Governor makes a declaration of a state of emergency on or after July 1, 2018. The refund applies only to property purchased no later than 180 days after the declaration of a state of emergency. The bill has an expiration date of July 1, 2022.

HB 1339	Left in/Failed to Pass Committee	Accelerated sales and use tax payments. Prohibits any requirement that a dealer remit accelerated sales and use tax payments, except as provided in a general appropriation act under the following circumstances: (i) if payments are required for dealers with sales of $15 million or less, such threshold may only be reduced by 10 percent the next year; (ii) if the Department of Taxation fails to notify dealers that accelerated payments are due at least nine months in advance, no penalty or interest may be assessed for late payments; and (iii) no penalty or interest may be assessed on a dealer subject to an accelerated payment due to a lowered threshold in the calendar year. If such accelerated payment is required in an appropriation act, a dealer may only be required to pay 90 percent of the dealer's sales and use tax liability for the previous June. The Department shall provide an online application for a dealer to apply for a hardship waiver. The bill prohibits requiring accelerated payments after June 30, 2020.
HB 1498	Left in/Failed to Pass Committee	Sales and use tax exemption. Provides a sales and use tax exemption on sales of tangible personal property by a nonprofit organization that is a volunteer organization and that is organized exclusively for the purpose of meeting the immediate, emergency, and temporary needs of low-income, unemployed, elderly, and handicapped individuals and families, including food, clothing, household items, and financial assistance, where existing agencies cannot do so.
SB 299	Left in/Failed to Pass Committee	Department of Taxation; reports on sales and use tax exemptions. Requires the Department of Taxation (the Department) to report annually to the Chairmen of the House Committee on Appropriations and the House and Senate Committees on Finance regarding the fiscal, economic, and policy impact of each sales and use tax exemption. The review of each exemption shall be performed on a rotation basis. No exemption shall be reviewed more than once every five years, but the exemption for computer purchases for use in data centers shall be reviewed every three years. Taxpayers that purchase tax-exempt computer equipment or enabling software for use in a data center shall submit to the Department every three years a list of its exempt purchases, including purchase prices, made during the previous three taxable years.

SB 746	Continued to 2019	Accelerated sales and use tax payments. Prohibits any requirement that a dealer remit accelerated sales and use tax payments, except as provided in a general appropriation act under the following circumstances: (i) if payments are required for dealers with sales of $15 million or less, such threshold may only be reduced by 10 percent the next year; (ii) if the Department of Taxation fails to notify dealers that accelerated payments are due at least nine months in advance, no penalty or interest may be assessed for late payments; and (iii) no penalty or interest may be assessed on a dealer subject to an accelerated payment due to a lowered threshold in the calendar year. If such accelerated payment is required in an appropriation act, a dealer may only be required to pay 90 percent of the dealer's sales and use tax liability for the previous June. The Department shall provide an online application for a dealer to apply for a hardship waiver. The bill prohibits requiring accelerated payments after June 30, 2020.
SB 814	Left in/Failed to Pass Committee	Aircraft sales and use tax; cap. Limits the maximum amount of sales tax and use tax due on an aircraft to $25,000.
SB 942	Reported from House Committee (2/27/18)	State sales and use tax; Historic Triangle. Creates a one percent state sales and use tax in the Historic Triangle. Fifty percent of the revenues will be used by the Williamsburg Area Destination Marketing Committee, through the creation of an office of marketing and promotion, to market, promote, and advertise the Historic Triangle as an overnight tourism destination, and the other 50 percent will be distributed to the localities in which the revenues were collected. The bill defines the Historic Triangle as the City of Williamsburg and the Counties of James City and York, an area of historic great historical significance that generates substantial employment and economic benefit for the Commonwealth. The bill removes the authority of these localities to impose the current $2 transient occupancy tax used to promote tourism in the area. The bill is contingent on the City of Williamsburg repealing recent ordinances raising the local transient occupancy, food and beverage, and admission taxes and will expire if the City of Williamsburg reinstates such taxes in the future.

Tax administration

SB 271	Reported from House Committee (2/27/18)	Notification of tax return data breach. Requires paid income tax return preparers to notify the Department of Taxation within a reasonable time period if they discover that an unauthorized person has accessed a taxpayer's return information. The bill defines return information and provides that it does not include publicly available information.

Tax credits

HB 54	Left in/Failed to Pass Committee	Renewable energy property tax credit. Establishes, beginning in taxable year 2018, a tax credit for renewable energy property placed in service. The bill defines "renewable energy property" as certain biomass equipment that uses renewable biomass resources, combined heat and power systems using waste heat to produce electricity or thermal or mechanical energy, certain geothermal equipment, hydroelectric generators located at existing dams or in free-flowing waterways, solar energy equipment, and wind equipment that is necessary for capturing and converting wind energy into electricity or mechanical power. The credit would equal 35 percent of the installed cost of the renewable energy property. However, the aggregate amount of credit allowed to each person for placing into service renewable energy property during the taxable year would not exceed $15,000. Only the ultimate consumer or user of the renewable energy property would be allowed to claim the credit. The credit would be required to be claimed in five equal annual installments beginning with the taxable year in which the property was placed in service. However, the amount claimed in a single year would not be allowed to exceed 50 percent of the person's total tax liability. The credit would expire and no further credit could be claimed if the renewable energy property was disposed of, taken out of service, or moved out of the Commonwealth during any of the installment years. The Department of Taxation would issue the tax credits. The Department would be authorized to issue $5 million in tax credits each fiscal year. Any unused credit could be carried forward for five taxable years. The credit would sunset in 2023.
HB 65	Left in/Failed to Pass Committee	Tax credits for employing individuals released from incarceration for conviction of a felony. Establishes, for taxable years beginning on and after January 1, 2018, but before January 1, 2023, an individual and corporate income tax credit for taxpayers hiring individuals released from incarceration into new jobs paying an annual salary of at least $50,000. The bill defines "individual released from incarceration" as a person who was released from incarceration for conviction of a felony within the five years immediately preceding the date on which the person was hired into the new job. The tax credit would equal $500 each year for five years for each such employee holding the new job continuously throughout the year. No credit would be allowed for any year in which the number of full-time employees of the taxpayer is less than the average annual number

of full-time employees of the taxpayer in the immediately preceding three years.

HB129	Reported from Senate Committee (2/27/18)	Worker retraining tax credit; manufacturing instruction for students. Modifies the worker retraining tax credit by allowing credit to manufacturers conducting a manufacturing orientation, instruction, and training program that is (i) provided to students in grades six through 12, (ii) coordinated with the local school division and certified as qualified for tax credit by the Virginia Economic Partnership Development Authority, and (iii) conducted either at a plant or facility used by the manufacturer or at a public middle or high school in Virginia. The credit would equal 35 percent of the manufacturer's direct costs in providing the program, not to exceed $2,000 for any year.
HB 256	Left in/Failed to Pass Committee	Individual income tax credit and property tax exemption for substantial-capacity solar equipment. Provides an individual income tax credit and a mandatory property tax exemption for substantial-capacity solar equipment. The bill defines "substantial-capacity solar equipment" and requires a taxpayer to obtain certification from his local building department that such equipment is eligible for exemption. Current law provides an exemption for a broader category of solar energy equipment, facilities, or devices; however, such exemption is permissive for localities and may be partial or full. The bill provides that a person may claim an income tax credit for his costs associated with substantial-capacity solar equipment if he includes his certification with his tax return. The amount of the credit is the least of $10,000, 10 percent of the equipment's installed cost, or the person's tax liability. The bill provides that the Department of Taxation shall issue no more than $500,000 in credits per taxable year, and it does not allow taxpayers to carry unused credit forward. The credit sunsets after taxable year 2022.
HB 395	Left in/Failed to Pass Committee	Education Improvement Scholarships tax credits; eligibility requirements and scholarship amounts. Eliminates the requirement that a student must currently attend or have recently attended a public school in order to qualify for a scholarship from a scholarship foundation that provides tax-credit-derived scholarships. The bill increases the maximum annual scholarship amount from 100 percent of the per pupil amount distributed to the local school division as its share of standards of quality costs (i) for a student with a disability, to 400 percent of such amount, and (ii) for a student who has an autism spectrum disorder, to $26,000. The bill adds to the

definition of "qualified educational expenses" expenditures made in connection to summer education.

HB 578	Left in/Failed to Pass Committee	Neighborhood Assistance Act tax credits; phase down credit value. Reduces the amount of the tax credit from 65 percent of the value of donations to neighborhood organizations for taxable years 2012 through 2017 to (i) 60 percent of such donations for taxable year 2018, (ii) 55 percent of such donations for taxable year 2019, and (iii) 50 percent of such donations for taxable years 2020 and thereafter.
HB 665	Reported from Senate Committee (2/27/18)	Coal tax credits. Reinstates the Virginia coal employment and production incentive tax credit. The credit, which expired on July 1, 2016, can be earned on and after January 1, 2018, but before January 1, 2023. The bill limits the aggregate amount of credits that may be allocated or claimed for the coal employment and production incentive tax credit in each fiscal year to $7.3 million. An electricity generator must file an application with the Department of Taxation each year to determine the amount of credits that it may claim or allocate, including credits earned in prior taxable years. If the total amount of credits earned in a taxable year exceeds $7.3 million, the Department of Taxation shall apportion the credits on a pro rata basis. The credits may be carried over for seven years. The bill also reestablishes the coalfield employment enhancement tax credit for metallurgical coal for taxable years beginning on and after January 1, 2018, but before January 1, 2023

| HB 700 | Left in/Failed to Pass Committee | School readiness tax credits. Establishes tax credits for five categories of expenditures related to school readiness: (i) parents' child care expenses, (ii) child care providers' expenses, (iii) educational development expenses of child care facility directors and staff, (iv) expenses paid by a business to improve child care for its employees' children, and (v) business's donations to child care resource and referral agencies. The bill defines "child" to mean a child under the age of six and "child care facility" to mean a facility that primarily serves children under the age of six. The credits related to child care facilities are only available if the facility has attained at least level two in the Virginia Quality Rating and Improvement System administered by the Department of Social Services. If the facility has attained a higher level, the credits are increased by a multiplier. The bill directs the Department of Social Services to develop professional development criteria for child care facility directors and staff. The criteria shall consist of four levels representing cumulative advancement in child care skill and shall be designed to ensure high-quality child care in Virginia. The credit for educational development expenses is increased by a multiplier depending on the level that the director or staff has achieved. The credit for child care expenses is based on a percentage of the federal income tax credit for child care and other dependent care expenses; however, it is reduced based on the parent's income level. The credits for child care expenses, child care providers, and educational development expenses are refundable if the taxpayer's adjusted gross income is less than or equal to $25,000. Taxpayers that have an adjusted gross income over $25,000 may carry forward any unused credit for up to five years. The bill provides that the Department may recapture any credit issued, with interest, from any taxpayer that obtained the credit but failed to meet the applicable criteria. |
| HB 966 | Continued to 2019 | Taxation in the Commonwealth; income tax, sales tax, and credit for certain local taxes. Provides, for taxable years 2018 through 2022, a refundable credit against individual and corporate income taxes for a business's aggregate tax liability under the machinery and tools tax, the merchants' capital tax, and the business, professional, and occupational license (BPOL) tax. The bill imposes a sales tax on all services except business-to-business, educational, health care, and real estate services. The bill requires the Department of Taxation (the Department) to assert the Commonwealth's jurisdictional nexus to tax services to the maximum extent allowed by Virginia and federal law and requires any person that furnishes services valued at $5,000 or more during a calendar year to register with the Department as a dealer. The bill provides that food purchased for human consumption shall be exempt from state sales tax. Under current law, food purchased for human consumption is taxed at a reduced state rate of 1.5 percent and a local rate of 1 percent. The bill eliminates the lowest two income tax brackets by providing that, starting with taxable year 2019, there shall be no income tax imposed on income of $5,000 or less. |

HB 1018	Left in/Failed to Pass Committee	Energy storage system tax credit. Establishes for taxable years 2018 through 2022 an income tax credit for a taxpayer's expenditures on an energy storage system. The bill defines energy storage system and provides that the credit shall not exceed the lesser of (i) $5,000 for a system on residential property or $75,000 for a system on commercial property, (ii) 30 percent of the system's total installed cost, or (iii) the taxpayer's tax liability. The bill directs the Department of Mines, Minerals, and Energy (the Department) to establish a process whereby taxpayers apply for certification that their expenditures are eligible for the credit. The bill limits the Department to issuing no more than $750,000 of tax credits, in aggregate, during a taxable year and directs the Department to approve credits in the order received. The bill prohibits taxpayers from carrying forward unused credit to later taxable years.
HB 1078	Left in/Failed to Pass Committee	Education Improvement Scholarships tax credits; limits eligibility to pre-kindergarten students. Provides that, on and after June 30, 2018, eligibility for Education Improvement Scholarships shall be limited to children in nonpublic pre-kindergarten programs and those students who received scholarships for the 2017 school year and each year thereafter. Under current law, tax credits are awarded for donations to foundations that use the funds to award scholarships to certain students in grades K-12 who attend nonpublic schools. The bill defines an eligible pre-kindergarten child and a nonpublic pre-kindergarten program and sets out several other curriculum and administrative requirements that must be met by a nonpublic pre-kindergarten program in order for children attending the program to be eligible to receive scholarships under the tax credit program. Under the bill, the Virginia Council for Private Education or the Virginia Early Childhood Foundation will certify nonpublic pre-kindergarten programs meeting such curriculum and administrative requirements. The bill provides that the maximum annual scholarship a child will receive is the lesser of his actual educational expenses or the state share of the grant per child under the Virginia Preschool Initiative for the locality in which the child resides.

HB 1165	Left in/Failed to Pass Committee	Education Improvement Scholarships tax credits; pre-kindergarten eligibility. Expands the Education Improvement Scholarships tax credits program by including, as eligible scholarship recipients, children enrolled in, eligible to attend, or attending nonpublic pre-kindergarten programs. The maximum annual scholarship that a child will receive is the lesser of the child's actual educational expenses or the state share of the grant per child under the Virginia Preschool Initiative for the locality in which the child resides. Under current law, tax credits are awarded to individuals and businesses making donations to nonprofit scholarship foundations that use the donated funds to award scholarships to certain students in grades K-12 attending nonpublic schools. Eligible scholarship recipients are students in grades K-12 with a finalized individualized education program (IEP) in place or whose annual household income is not in excess of 300 percent of the federal poverty guidelines. The bill defines an eligible pre-kindergarten child and a nonpublic pre-kindergarten program and includes several other curriculum and administrative requirements that must be met by a nonpublic pre-kindergarten program in order for children attending the program to be eligible to receive scholarships under the tax credit program. Under the bill, the Virginia Council for Private Education, the Virginia Early Childhood Foundation, or the Virginia Department of Social Services will certify nonpublic pre-kindergarten programs meeting such curriculum and administrative requirements.
HB 1372	Sent to Governor (2/27/18)	Green job creation tax credit; extends sunset provision. Extends through taxable year 2019 the sunset date for the green job creation tax credit. Under current law, the credit expires for taxable years beginning on January 1, 2018.
HB 1382	Reported from Senate Committee (2/27/18)	Agricultural best management practices tax credit; refundability for corporations. Allows taxpayers to apply for a refund of corporate income tax credits received for expenditures for agricultural best management practices. Under current law, corporate income tax credits that exceed the taxpayer's tax liability are not refundable but

may be carried forward for up to five years. Furthermore, under current law, individual income tax credits for expenditures related to agricultural best management practices are refundable.

HB 1575	Left in/Failed to Pass Committee	High school apprenticeship tax credit. Creates a tax credit for a business that hosts a junior or senior in a Richmond City high school as an apprentice for a semester during the 2018-2019 or 2019-2020 academic year. The business would receive a $2,500 credit per student, per semester. Participation in the program would be limited to 25 students.
SB 172	Left in/Failed to Pass Committee	Education Improvement Scholarships tax credits; pre-kindergarten eligibility. Expands the Education Improvement Scholarships tax credits program by including, as eligible scholarship recipients, children enrolled in or attending nonpublic pre-kindergarten programs. The maximum annual scholarship that a child admitted to, enrolled in, or attending a nonpublic pre-kindergarten program will receive is the lesser of the child's actual educational expenses or the state share of the grant per child under the Virginia Preschool Initiative for the locality in which the child resides. Under current law, tax credits are awarded to individuals and businesses making donations to nonprofit scholarship foundations using the donated funds to award scholarships to certain students in grades K-12 attending nonpublic schools. Eligible scholarship recipients are students in grades K-12 with a finalized individualized education program (IEP) in place or whose annual household income is not in excess of 300 percent of the federal poverty guidelines. The bill defines an eligible pre-kindergarten child and a nonpublic pre-kindergarten program and includes several other curriculum and administrative requirements that must be met by a nonpublic pre-kindergarten program in order for children attending the program to be eligible to receive scholarships under the tax credit program. Under the bill, VCPE or the Virginia Early Childhood Foundation will certify nonpublic pre-kindergarten programs meeting such curriculum and administrative requirements. The bill also reduces the penalty for failure to fully disburse all donations received from 200 percent of the difference between 90 percent of the value of the donations it received and the amount disbursed to 100 percent of the difference. This bill incorporates SB 553.

SB 378	Reported from House Committee (2/27/18)	Coal tax credits. Reinstates the Virginia coal employment and production incentive tax credit. The credit, which expired on July 1, 2016, can be earned on and after January 1, 2018, but before January 1, 2023. The bill limits the aggregate amount of credits that may be allocated or claimed for the coal employment and production incentive tax credit in each fiscal year to $7.3 million. An electricity generator must file an application with the Department of Taxation each year to determine the amount of credits that it may claim or allocate, including credits earned in prior taxable years. If the total amount of credits earned in a taxable year exceeds $7.3 million, the Department of Taxation shall apportion the credits on a pro rata basis. The credits may be carried over for seven years. The bill also reestablishes the coalfield employment enhancement tax credit for metallurgical coal for taxable years beginning on and after January 1, 2018, but before January 1, 2023.
SB 553	Incorporated into SB 172	Education improvement scholarships tax credits; eligibility; payout penalty. Expands the education improvement scholarships tax credits program by including as eligible scholarship recipients children who are eligible to enter pre-kindergarten. In addition, the bill reduces the penalty for failure to fully disburse all donations received from 200 percent of the difference between 90 percent of the value of the donations it received and the amount disbursed to 100 percent of the difference. Under current law, foundations must spend at least 90 percent of donations on scholarships in order to avoid the penalty.
SB 573	Reported from House Committee (2/27/18)	Green job creation tax credit; extends sunset provision. Extends through taxable year 2020 the sunset date for the green job creation tax credit. Under current law, the credit expires for taxable years beginning on January 1, 2018.
SB 937	In House Committee (2/27/18)	High school apprenticeship tax credit. Creates a tax credit for a business that hosts a junior or senior in a Richmond City high school as an apprentice for a semester during the 2018-2019 or 2019-2020 academic year. The business would receive a $2,500 credit per student, per semester. Participation in the program would be limited to 25 students. The provisions of the bill are contingent on funding in a general appropriation act.
SB 963	Left in/Failed to Pass Committee	Tax credits for contributions to the Commonwealth Competitiveness Fund. Establishes the Commonwealth Competitiveness Fund (the Fund) and provides that a taxpayer shall receive an income tax credit in the amount of 90 percent of his contribution to the Fund starting with taxable year 2018. The bill provides that moneys in the fund shall be used for exclusively public purposes and shall be subject to appropriation by the General Assembly; however, 10 percent of the money in the Fund shall be reallocated to the at-risk add-on based on the concentration of children qualifying for the federal Free Lunch Program. The bill provides that the credit shall not exceed the taxpayer's tax liability. The bill provides that a taxpayer may not claim a charitable deduction for state tax purposes if he claims a credit

Innovation Lives Here

under the bill for the same donation to the Commonwealth Competitiveness Fund. The bill provides that if a federal agency or federal court issues a public ruling, regulation, or court decision that limits the amount allowed for federal tax purposes under the federal charitable contribution deduction, the amount of the state credit shall be limited to the amount as determined by the federal agency or court.

Tax exemptions

HB 288	Left in/Failed to Pass Committee	Recordation tax exemption; certain limited liability companies and limited or general partnerships. Provides a recordation tax exemption for deeds transferring property (i) to a subsidiary limited liability company or partnership from its parent limited liability company or partnership, (ii) from a subsidiary limited liability company or partnership to a parent limited liability company or partnership, (iii) to a limited liability company or partnership from a commonly owned limited liability company or partnership, or (iv) to a limited liability company or limited or general partnership from a commonly owned limited liability company or limited or general partnership, if the transaction qualifies for nonrecognition of gain or loss under the Internal Revenue Code and if the transfer is not a precursor or subsequent to a transfer of control of the assets of the company to avoid recordation taxes.
HB 471	Left in/Failed to Pass Committee	State and local tax and regulatory exemptions for new small businesses. Exempts new small businesses from (i) payment of unemployment, sales and use, and local license taxes and (ii) certain registration and reporting requirements with the State Corporation Commission. The bill defines an eligible business as any business that has its principal place of business in the Commonwealth, has not been in existence for more than five years, and has fewer than six employees or has paid less than $5,000 for the purchase or lease of business personal property, including machinery and tools and merchants' capital, since its inception.

Tax incentives

SB 297	Left in/Failed to Pass Committee	Incentives for communications companies; provision of wireless broadband services. Directs the Tobacco Region Revitalization Commission to award at least $10 million per year in grants to cover a portion of expenditures for the purchase and installation of wireless and broadband equipment to rural areas in the Southwest and Southside regions of the Commonwealth. The bill also establishes a sales tax exemption, which would be phased in over four years, for property sold or leased to a telecommunications company and used directly in the rendition of its public service.

Tax increment financing

HB 1092	Sent to Governor (2/27/18)	Tax increment financing; dredging projects. Specifies that dredging projects are development projects eligible for tax increment financing.

Tax withholding

HB 133	Left in/Failed to Pass Committee	Employees; exclusions for home healthcare workers and home adult day care service providers. Provides that home healthcare workers and home adult day care service providers are not employees for purposes of labor and employment laws, unemployment compensation, workers' compensation, and state income tax withholding.

Unemployment compensation

HB 82	Sent to Governor (2/27/18)	Workers' compensation; Uninsured Employer's Fund; financing tax. Repeals an enactment clause that provides that the maximum tax rate that may be assessed on insurance carriers or self-insured employers for the purpose of funding workers' compensation benefits that are awarded against uninsured employers from the Uninsured Employer's Fund will revert from 0.5 percent to 0.25 percent on July 1, 2018. Repealing the enactment will maintain the maximum rate at its current level of 0.5 percent.
HB 120	Left in/Failed to Pass Committee	Unemployment compensation; wage offset. Provides that the weekly unemployment benefit to which an eligible individual is entitled shall be reduced on a dollar-for-dollar basis by any wages in excess of $100 that the individual earns in that week. Currently such benefit is reduced dollar-for-dollar by wages in excess of $50 earned in a week.
HB 538	Sent to Governor (2/27/18)	Unemployment insurance tax reports and payments; filing. Requires the Department of Taxation to include on the its tax portal the ability for taxpayers to file unemployment insurance tax reports and pay unemployment insurance taxes through the same means used for other business tax filings.
HB 1293	Sent to Governor (2/27/18)	Unemployment compensation; penalty for failure to file reports. Increases the penalty, from $75 to $300, that the Virginia Employment Commission is required to assess an employer who fails to file a report required under Title 60.2 (Unemployment Compensation) with respect to wages or taxes.
HB 1391	Left in/Failed to Pass Committee	Unemployment compensation; overtime compensation. Excludes from the definition of wages any part of the individual's remuneration paid as overtime compensation required by § 207 of the federal Fair Labor Standards Act. The exclusion applies only for purposes of computing the weekly benefit amount based on an individual's earned wages for insured work subsequent to December 31, 2018.
SB 897	Continued to 2019	Workers' compensation; taxicab and executive sedan drivers. Provides that the exclusion from the definition of "employee" within the Virginia Workers' Compensation Act for taxicab or executive sedan drivers who are excluded from taxation under the Federal Unemployment Tax Act is not contingent upon whether evidence of the tax exemption is furnished to the Virginia Workers' Compensation

Commission. The measure contains an emergency clause, and its provisions will be effective retroactive to December 31, 2017.

SB 968	Left in/Failed to Pass Committee	Unemployment compensation; failure of employing unit to furnish reports; penalty. Provides that an employing unit that willfully fails or refuses to furnish a report required by the Unemployment Compensation Act or to produce or permit the inspection or copying of records is liable to a penalty of $1,000 for each offense. The measure also authorizes the Commissioner of the Virginia Employment Commission to order an employer that continues to violate such provisions after three days' notice to cease and desist all business transactions and operations until it is found to be in compliance.

Utilities taxes - Rates

HB1573	Left in/Failed to Pass Committee	Electric utilities; rate adjustment based on changes in corporate income tax rates. Authorizes the State Corporation Commission to (i) adjust the rates of any investor-owned electric utility to recognize changes in the utility's cost of service associated with the reduction in federal corporate income tax rates resulting from a federal law and (ii) continue to determine income tax costs for any such utility. The measure has an emergency clause.

Alexandria

Welcome to Alexandria, a blank canvas at one of the last remaining infill development areas inside the Capital Beltway

Unparalled Location

Alexandria is at th eheart of the washington, D.C. metro region, with unmatched opportunity to build Amazon's ideal campus within the urban core. From every building on the Alexandria site, Amazonians will be able to take in views of Washington, D.C. and the Potomac River. The prominent campus will be visible for miles from the ground and sky From here, a trip to the airport takes just 10 minutes, and a meeting or concert in downtown D.C. is only 20 minutes away.

Single, Coordinated Development District

The site is located within the Eisenhower Development District: a mixed-use development zone and the future of Alexandria. It has been planned to incorporate all different types of uses, pedestrian friendly environments, open space, retail experiences, and world-class transportation. The Development District also allows for density and uses to be moved within the zone, thus allowing for the customization of a campus. Without building height restrictions, the sky is the limit to create a unique, dynamic, and iconic headquarters.

Thriving Community

In Alexandria, Amazon will become part of a vibrant and historic community. Old Town is famous for its boutique shopping and dining experiences and active waterfront, all a short walk or bike ride from the site. Alexandrians enjoy an exceptional quality of life with abundant parks, open space, and recreational activities available for all residents. Across the city, Alexandrians take pride in our community's diversity and growth, and are actively investing in the future to support education, transportation, and housing.

Existing Infrastructure

As part of an existing neighborhood, the infrastructure to support a world-class headquarters is already in place. Employees can arrive directly to their office via the existing Metrorail station on site, from the adjacent I-495 expressway, or by biking on one of the many bike lanes and trails in the neighborhood. On and around the site, housing options to meet all employees' needs are available, including luxury apartments for the young professional, townhomes for growing families, and large single-family homes.
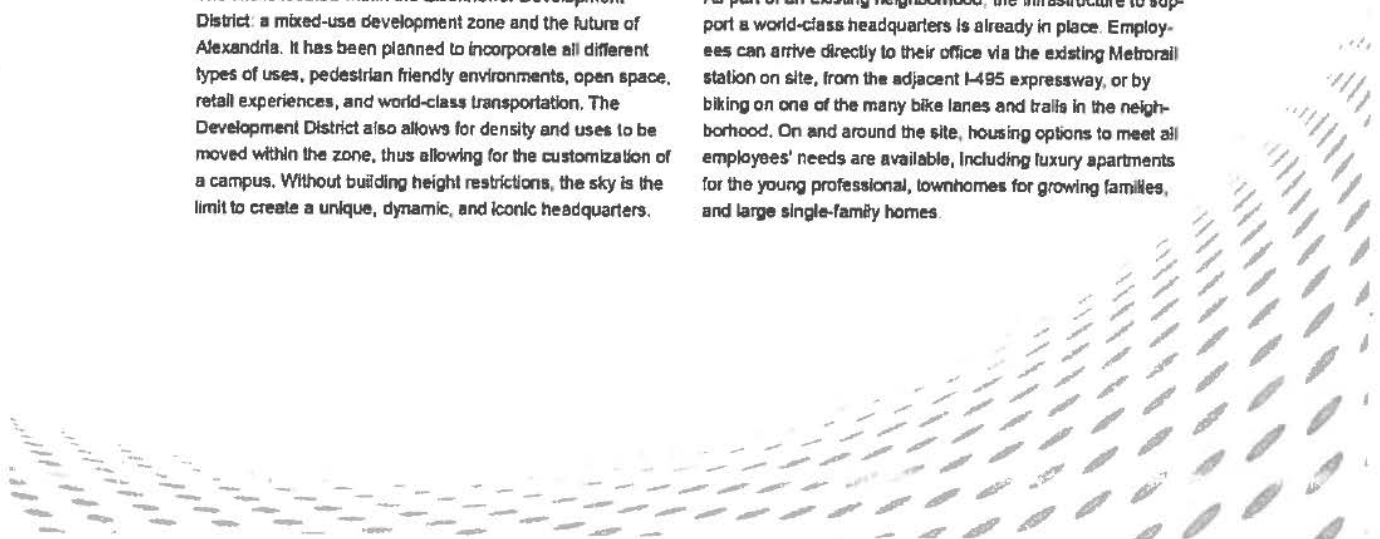
Real Estate | Site

A1. Site Name/Site Designation
A2. Street Address(es), including City, State/Commonwealth/Province and Zip/Postal Code, if available
A3. Location
A3.a. If Site is currently unincorporated, detail any plan(s) to annex Site to an incorporated municipality, as well as the benefits and burdens of any annexation. Name the intended municipality/municipalities to which Site would be annexed.
A3.b. County (Name), if applicable

Alexandria UNRIVALED, presented by the City of Alexandria, in partnership with Perseus-TDC, a Transwestern Development Company affiliate, as the lead development partner.

Buildings available for immediate occupancy:

- 2461 Eisenhower Avenue, Alexandria, VA 22314
  - 335,000 square feet, renovated office building
  - Ready for tenant improvement build-out, effective June 2018
- 200 Stovall Street, Alexandria, VA 22314
  - 575,000 square feet, renovated office building
  - Ready for tenant improvement build-out, effective March 2019

Location

Over the last 15 years, the City of Alexandria and property owners in the Eisenhower Avenue area have begun implementing plans that will continue the transformation of this neighborhood into a 'city within a city.' A true complement to neighboring Old Town, we are building a vibrant pedestrian-oriented environment, featuring distinctive architecture, a healthy mix of jobs, residences, and retail, all linked by a network of plazas and parks. This UNRIVALED neighborhood is making its mark as the home of innovation and advancement, and neighboring scientists, subject matter experts and creative thinkers at the National Science Foundation and U.S. Patent and Trademark Offices are ready to welcome Amazon's HQ2!

Real Estate | Description, Characterization

A4.a. Description – Briefly describe Site (shape, topo, etc.)
A4.b. Characterization – Indicate all that may apply:
- Brownfield
- Commercial, including Commercial Park
- Greenfield
- Industrial, including Industrial Park
- Suburban
- Technology, including Technology Park
- Urban

A4.c. Description – Briefly describe any geographic features that may limit or enhance the growth of Site (e.g., water or mountains)

The Alexandria Site is an urban infill development location within the area governed by the Eisenhower East Small Area Plan.

The proposed Site encompasses approximately 22.1 acres spread over 11 "development blocks." Two of these blocks offer 910,000 square feet of office space that can serve the initial phasing of the Project in 2019. The remaining blocks are paved surface parking lots, vacant land, or structures with a mix of office, retail, and warehouse uses, all of which have been approved for substantial redevelopment.

The Eisenhower East Small Area Plan calls for a mixed-use transit orientated neighborhood with an authentic urban design and significant density. The Site surrounds the Eisenhower Avenue Metrorail Station and offers convenient access to the Capital Beltway (I-495). The City has adopted a highly flexible zoning designation for the area known as the CDD, or Coordinated Development District. This designation was used to successfully develop the headquarters of the National Science Foundation (700,000 square feet) and the U.S. Patent & Trademark Office (2,500,000 square feet). The City also recently approved a mixed-use development adjacent to the Immediate Occupancy Site that includes 500 residential units and over 300,000 square feet of retail. The terrain around the Site also includes public open space and natural areas. The topography of the Site area is gently falling at an average slope of 1%.

Characterization:
☒ Urban

The Alexandria Site is bordered by Telegraph Road to the west and Cameron Run and the Capital Beltway to the south. To the north and east, existing features include easements for the Washington Metropolitan Area Transit Authority (WMATA) Metrorail, commuter and heavy rail tracks, and the existing Carlyle neighborhood. Carlyle is home to the U.S. Patent & Trademark Office and a mix of uses including hotels, restaurants, and a Whole Foods. A unique feature of this area is the City's use of the Coordinated Development District zoning designation which allows for significant density and mixed-use development. The Site includes 11 parcels, or blocks, available to accommodate the Project's needs and additional supporting development to create an authentic urban neighborhood.

Real Estate | Size

A5.a. Immediate: Number of acres (either contiguous or within close enough proximity to foster a sense of place and pedestrian-friendliness) currently available for the Project's immediate operations

A5.b. Expansion: Number of acres (either contiguous or within close enough proximity to foster a sense of place and pedestrian-friendliness) available for the Project's future or expansion operation

A5.c. Schematic: Attach schematic drawing of Site.

A5.d. If less than 100 acres, is Site expandable to 100 acres?

A5.d.(i) Detail the plan and timetable for doing so.

In the heart of this Metro-centric neighborhood, Amazon can move into development blocks 6A and 6B for Phase 1 requirements; they are available for immediate tenant buildout and occupancy.

Combined, these blocks total 3.6 acres and will contain 910,000 square feet of office space. 2461 Eisenhower is available now for tenant buildout of 335,000 SF and occupancy by the end of 2018. The building sits next to 200 Stovall Street (details below) and offers a fully renovated single-occupant office building at the Metro, featuring a new outdoor plaza with seating and large gathering areas, approximately 25,000 square feet of existing retail, including six restaurants with major upgrades underway, convenient surface parking, and substantial additional parking in the area.

New Entrance to Shops & Offices at 2461 Eisenhower Avenue

Ground Floor Retail at 2461 Eisenhower Avenue

200 Stovall Retail & Office Building

200 Stovall Street offers 575,000 square feet of office space and will be ready for tenant buildout in March of 2019. Renovations underway now will add two rooftop patios totaling over 10,000 square feet, 27,000 square feet of ground floor retail, three new penthouse levels, three-level fitness facility, movie room, golf simulator, yoga room, and a conference center.

Renovated 200 Stovall Street with new penthouses

Ground Floor Retail at 200 Stovall Street

These two Phase I buildings provide Amazon with highly amenitized office space in the heart of your future home. From roof decks and offices, Amazonians will be able to watch the entire HQ2 campus come to life, and play an important role in shaping this next great Alexandria neighborhood!

Expansion can occur across 9 additional development blocks which total 35 acres.

These blocks contain a mix of existing surface parking lots, vacant land, and structures with a mix of office, retail, and warehouse.

The blocks available for development or redevelopment shown on the embedded schematic include: 2, 3, 9A, 9B, 11, 12, 24, 25A, and 32A. Total new planned density in this area exceeds 14,000,000 square feet—to include office, residential, hotel, and retail uses.

Expansion options- buildings identified in green

Phase 1 buildings marked with flags, later phase buildings identified in blue
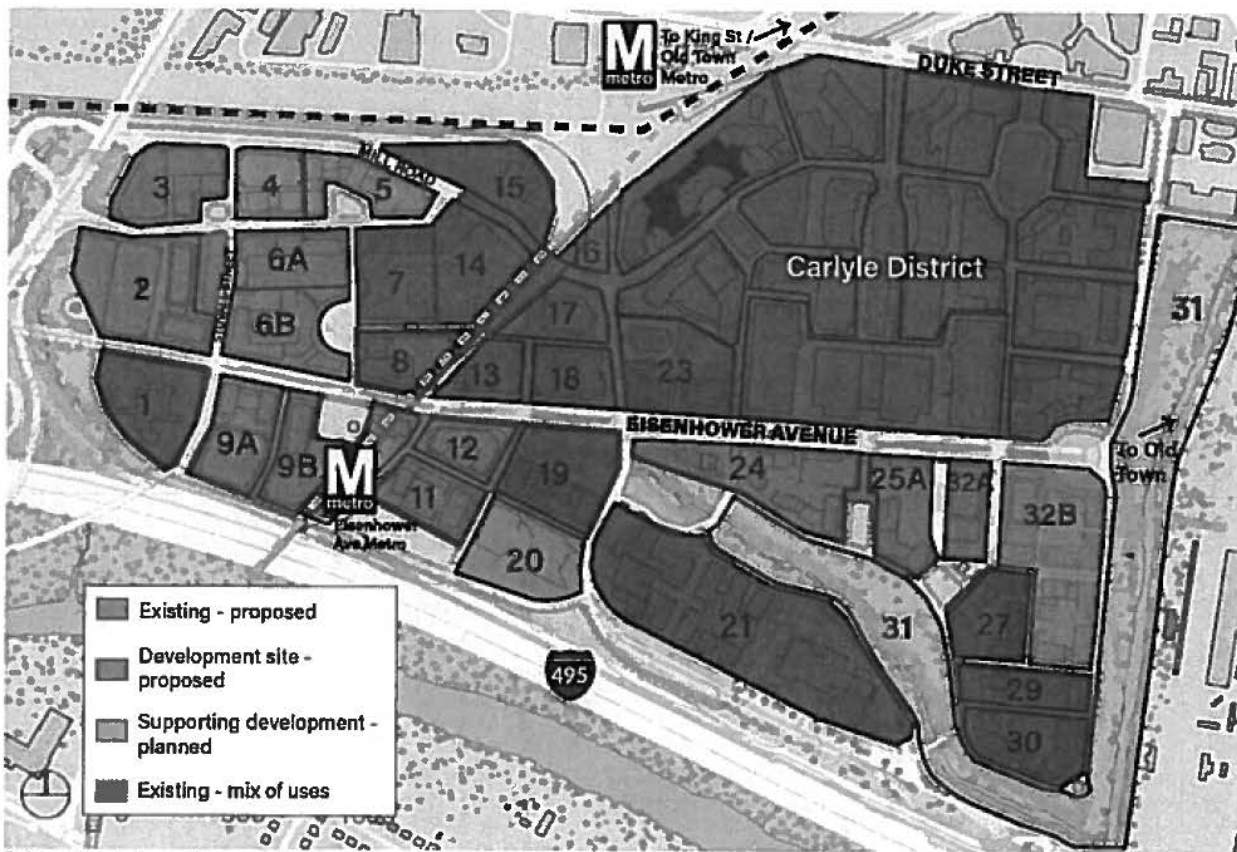
Schematic of site and surrounding area

Is the Alexandria site expandable to 100 acres?
☒ No

Real Estate | Improvements

A6.a. Are there any buildings or structures or other improvements on Site (or portion of Site)?

A6.b. If Yes, describe all buildings, structures and other improvements on Site (or portion of Site), including available square footages and sustainability efforts.

Are there any buildings or structures or other improvements on the Alexandria site?
☒ Yes

Block 6A located at 200 Stovall Street contains an existing 660,000 square foot office building. This building will be fully renovated by 2019 with a complete redesign of the exterior façade, 575,000 square feet of available office space, and the inclusion of ground-floor retail. The developer will install state-of-the-art features to achieve a minimum LEED Silver certification.

There is an existing 345,000 square foot LEED Silver office building with an attached retail component, including restaurants, on Block 6B located at 2461 Eisenhower Avenue. The office building and adjacent retail are currently undergoing a full renovation and will contain 335,000 square feet of office space for immediate occupancy.

Blocks 24 and 25A currently contain a mix of uses including a low-rise office building, parking garage, retail component, and industrial warehouse.

There are no buildings on the other development blocks presented.

Real Estate | Improvements

A7. Easements, Licenses, Rights of Way: describe each of the easements, licenses and rights of way affecting Site, and identify the beneficiaries, holders or owners of the same. If easier to show on a map, please attach to submittal and label.

See attached maps with file names:
A.7 Alexandria Site_Easements_Licenses_Rights of Way-Blocks 9A 9B 11 12.pdf
A.7 Alexandria Site_Easements_Licenses_Rights of Way-Block 6A.pdf
A.7 Alexandria Site_Easements_Licenses_Rights of Way-Block 6B.pdf
A.7 Alexandria Site_Easements_Licenses_Rights of Way-Blocks 24 & 25A.pdf

Real Estate | Improvements

A8. Ownership: describe the ownership of Site, including the ownership structure and any entitlements.

The majority of the Site proposed for Amazon is owned or controlled by Perseus-TDC, an entrepreneurial development company, formed through a merger of D.C.-based Perseus Realty, LLC and Transwestern Development Co. (TDC®).

Perseus-TDC is a full-service Development Company with a focus on urban residential, office and mixed-use projects in Washington, D.C. and the core suburban markets of Virginia and Maryland. The overarching goal of this organization is to be a DC-focused development company with a focus on urban development, sustainability and community building.

Company Overview:
- Since 2013, $1.32 billion in projects capitalized, completed, and stabilized.
- Combined with projects under construction and pipeline with owned/controlled land, the total volume reaches $4 billion.
- This represents $840 million in external equity commitments, $53 million in internal equity commitments, and $1.2 billion in bank financing.
- Notable institutional venture partners include AEW, Invesco, LaSalle, UBS, JP Morgan Asset Management, Crow Holdings, Pimco, Nationwide, State of Michigan, Principal, and Allstate.
- Notable clients for fee projects include Clarion, TIAA-CREF, Principal, Duke Realty, and Texas Children's Hospital.

Perseus-TDC owns the buildings and land in blocks 6A, 24, and 25A (fee simple) and is the contract purchaser for blocks 2, 3, 9A, 9B, 11, and 12 from the Hoffman Company, a local, family-owned real estate company in the process of selling parcels in this market to development companies. These parcels include an existing office building with 575,000 square feet and are approved for over 4,600,000 square feet of new density, with approval for an additional 4,200,000 square feet in process, all immediately available for HQ2 development.

A joint-venture between affiliates of Rubenstein Partners and Northpoint Realty Partners owns the building and land in block 6B, an existing 335,000 square feet of office with approval for an additional 500,000 square feet in process, all immediately available for HQ2.

Block 32A is owned by Alder Branch Realty Limited Partnership, represented by JM Zell Partners and is entitled for more than 700,000 square feet of office, immediately available for HQ2 development.

Existing Available Office	910,000 SF
Approved Office	5,800,000 SF
Entitlement Pending (process underway)	6,100,000 SF
TOTAL available for HQ2	12,810,000 SF

More detail is provided in the Planning/Zoning section of the RFI as it relates to the entitlements.

Real Estate | Improvements | Acquisition Costs

A9. Please describe if all or a portion of Site will be made available at no cost, or a reduced cost to the Project.
A9.a.(I). Will a government agency make Site available to the Project at no cost?
A9.a.(I). Will a government agency make Site available to the Project at no cost?
A9.a.(ii). If No, specify the per acre (and total) cost of Site to the Project?
A9.b.(i). Will a nonprofit entity make Site available to the Project at no cost?
A9.b.(ii). If No, specify the per acre (and total) cost of Site to the Project.
A9.c.(i). Will individuals or corporations or other entities make Site available to the Project at no cost?
A9.c.(ii). If No, specify the per acre (and total) cost of Site to the Project?

The City of Alexandria, in cooperation with the property owners presenting this site to Amazon, have proposed a 15-year partial real estate tax abatement which results in a reduced cost to the Project. Details are provided in the Incentives section.

Will a government agency make Site available to the Project at no cost?
N/A.

Will a nonprofit entity make Site available to the Project at no cost?
N/A.

Will individuals or corporations or other entities make Site available to the Project at no cost?
☒ No

The cost per acre depends on the Floor Area Ratio (FAR) allowed on each development block. Perseus-TDC and the City of Alexandria are willing to partner with Amazon on a long-term land and building solution for HQ2. In the next round of discussions, as additional information on the Project's path of growth and preference for ownership versus leasing is explained, pricing and options can be discussed in detail. Because of the flexibility and varied growth options in Alexandria, the developers and local jurisdiction will work closely with Amazon on determining the most desirable campus development path and coordinate development timing to match that desired path of growth. Perseus-TDC has experience in various economic structures, to include traditional leasing, ground lease, fee-simple land sales, and joint ventures.

Real Estate | Improvements

A10. Parking: identify all current and future parking options for Site
A10.a. Existing and Planned Retail Development near Site
A10.a.(i). Restaurants
A10.a.(ii). Cinemas
A10.a.(iii). Shopping
A10.a.(iv). Other Public Gathering Spaces (such as coffee shops and local breweries)

Within a ½ mile of the site for the initial phase there are 7,800 existing surface and garage parking spaces at seven parking facilities.

There are several additional existing surface parking lots that could be used for interim parking as the Project's development occurs.

Plans also exist to increase parking availability at 200 Stovall Street and a new proposed 650,000 square foot collector parking garage was recently approved as part of the development of Blocks 4 and 5. As the Project expands there is potential to add on-site parking as new buildings are constructed.

- 2461 Eisenhower Avenue (Block 6B) includes over 25,000 square feet of existing retail with a coffee shop and several restaurants. The owner plans to add outdoor dining space and retail once a full building renovation is complete in 2019.

- Additional existing retail and entertainment options, including an AMC movie theater and CVS pharmacy, are directly adjacent to the buildings identified for immediate occupancy. There are over 20 restaurants within walking distance of the proposed Site providing a variety of options from fast casual to full-service restaurants. The immediate area is also home to a number of neighborhood serving establishments including a Whole Foods, pharmacy, multiple salons/spas, dry cleaners, and two daycare facilities.

- There are a number of fitness facilities in and around the Site to include traditional gyms, personal training studios, boutique fitness like dance, Zumba and CrossFit, and a Sportrock Climbing Center. There is also a water park, mini-golf, and batting cages facility located just west of the Site on Eisenhower Avenue.

- The Eisenhower East Small Area Plan includes a total of 523,500 square feet of new retail including restaurants, fitness/wellness centers, and grocery stores. The plan also includes a major urban public plaza that will feature gathering places and public art for employees and residents to enjoy during the day and after work in an attractive public environment, all within two blocks of the Metrorail station.

- Construction on Blocks 4 and 5, will begin in late 2018 to include 200,000 square feet of second-story retail featuring a high-end gym, wellness center, and daycare, an 80,000-square-foot Wegmans grocery store and 54,000 square feet of street-level active retail.

- The City of Alexandria encourages ground floor activation of all new buildings in this neighborhood, so each new HQ2 building delivery will also add additional restaurants and retail at the base of the building. The development team and City will work with Amazon and other tenants for input in recruiting those retail tenants.

Restaurants near the Alexandria site:

- The retail center at 2461 Eisenhower Avenue has six food and beverage establishments, including a Starbucks, Ted's Montana Grill, brick oven pizza, and Thai restaurants. Additional retail opportunities available within the center include a new 9,600 square foot space with the option for outdoor dining. A retail pad site on the property is also available for future development based on the office tenant's preferences.

- There are over 20 restaurants within walking distance of the Site offering a variety of options for any time of day and budget. Several restaurants are owned by local restaurateurs who have recently expanded into the neighborhood and there is a diversity of choices from international to fast casual.

- Dozens of dining options are located in historic Old Town which is just a short bike ride or rideshare away from the Site. Old Town's authentic atmosphere offers weekly Yappy Hours for dogs and owners and delicious meals at chef-driven restaurants. Old Town's historic buildings provide unique spaces to grab coffee or to experience stunning views of the Potomac River during a special occasion.

- Food trucks are also an important part of the dining scene in Alexandria, and parking spaces on Eisenhower Avenue are reserved for these vendors to provide lunchtime offerings to the office crowds.

Cinemas near the Alexandria site:

- The Site includes an AMC 22 movie theater and other entertainment venues such as Pump It Up, an indoor bounce house for children. Additional theaters and entertainment venues are within close proximity to the Site in the Old Town and Del Ray neighborhoods of Alexandria. Just over the Woodrow Wilson Bridge (or a short water taxi ride away) in Maryland are National Harbor and the new MGM Grand Casino which have several indoor and outdoor live entertainment venues.

Shopping near the Alexandria site:

- Within walking distance to the Site are a number of service-orientated shops including pharmacies, dry cleaners, and salons. The neighborhood has a Whole Foods and a Wegmans is planned for development next to the buildings proposed for initial occupancy. The area plan calls for several hundred thousand more square feet of retail to be phased in over several years.

- King Street in historic Old Town (within a seven-minute bike ride or drive from the Site) is considered the Greater Washington, D.C.'s most authentic main street experience. Here shoppers can find dozens of unique and independent boutiques to casually peruse while walking the two miles of King Street from the metro station to the waterfront. Year-round on Saturdays, the Old Town Farmers Market – the oldest continuously operating in the country – provides residents and visitors access to more than 70 vendors offering produce, meat, poultry, cheeses, pastries, flowers, and artwork.

Other public gathering spaces near the Alexandria site:

- Approved development plans call for the addition of a major urban public plaza within the Site that will feature gathering places and public art. This will be in addition to numerous existing parks and plazas at or within walking distance to the Site.

- Alexandria's waterfront is a short bike, car, or transit ride from the Site and provides one of the few access points to the Potomac River in Greater Washington, D.C. Efforts are currently underway to build a continuous connection along the riverbank so walkers, joggers, and cyclists can travel unimpeded between the City's numerous waterfront parks. At the foot of King Street there is access to the Potomac Riverboat Company's water taxis which service several locations throughout the region including Nationals' Stadium, George Washington's Mount Vernon, and National Harbor, MD.

- The Greater Washington, D.C. area has a vibrant local brewing scene, with more than 70 breweries in the region. Located within two to three miles of the Site there are locally run establishments like Port City Brewing Company, Portner Brewhouse, Misha's Coffeehouse & Roaster, and Swing's Coffee Roasters offering fun and vibrant gathering places for friends and families. Most are accessible via bike and/or transit.

Alexandria's neighborhoods offer considerable diversity in housing stock, ranging from traditional suburban neighborhoods to mixed-use transit-oriented areas, all of which are within close proximity to the Site.

Within a 10-mile radius of this Site, Amazon employees will have access to a sizable stock of market-rate affordable units in all shapes and sizes in neighborhoods including Virginia's Eisenhower Valley, BelleView, Huntington, Springfield, Kingstowne, West End, and Annandale. This site also uniquely offers quick access to Maryland neighborhoods in Prince George's County, just over the Woodrow Wilson Bridge. Please see the individual neighborhood profiles for more information on housing options within a reasonable commuting distance from the Alexandria site.

Affordable housing is an important area of focus for the City of Alexandria—a community committed to providing housing options for employees of all levels in the private and public sector.

Alexandria's 2013 Housing Master Plan (HMP), a tool to help the City achieve this goal, provides a range of financial, land use, and zoning tools to amplify the City's efforts to produce and preserve affordable housing units above and beyond those that are available as "market rate affordable." Within ½ mile of the site, there are already over 60 dedicated affordable units (at 60% AMI) and approved plans call for 15 additional dedicated affordable rental units in a new residential tower. The developer of the new mixed-use project at Blocks 4 and 5 has agreed to work with the City to explore opportunities to provide air rights within its development for the construction of approximately 75 units of dedicated affordable rental housing. Given the City's commitment to affordable housing, it can be expected that future residential development at or near the Site will include affordable units.

Over 1,000 additional dedicated affordable rental units are in the City's active development/financing pipeline through 2025.

These projects are being planned by nonprofit and private developers, and include both preservation/renovation and new construction. The proposed developments are located throughout the City, including within the Site and along Eisenhower Avenue (approximately 3 miles to the west). Other units are planned for the Old Town and Potomac Yard neighborhoods. Separate from this, the City is also exploring opportunities for co-location of affordable housing with new municipal/school projects, as well as opportunities to develop mixed-income affordable assisted living.

Real Estate | Improvements | Greenspace

A12. Greenspace Features: are there greenspace features that enhance Site (e.g., parks, jogging trails, etc.)
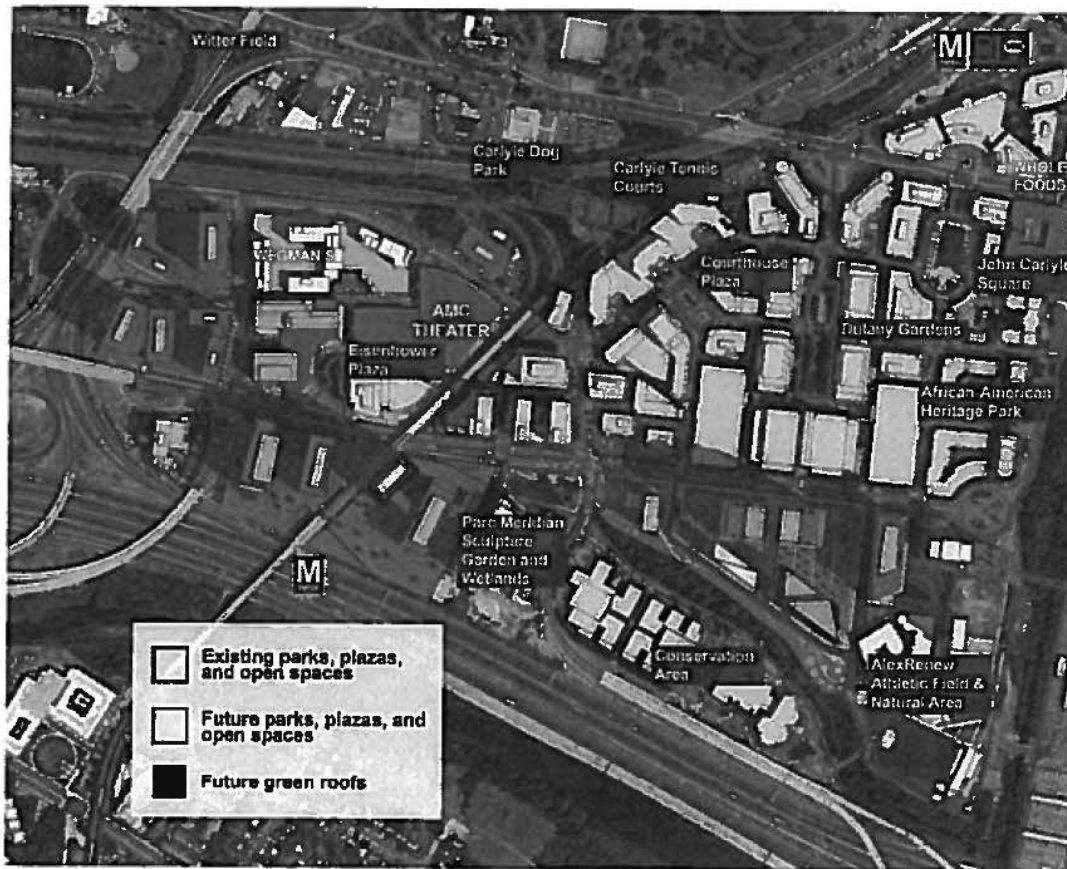
The area surrounding the Site has many existing parks that are often used to support outdoor activities and programs such as fitness classes, movie nights, and pop-up retail events during the work week and weekends.

Notable existing features within walking distance include:
- Carlyle Dog Park
- African-American Heritage Park
- AlexRenew athletic fields and natural area
- Parc Meridian Sculpture garden and wetlands
- John Carlyle Square Park
- Dulany Gardens
- Courthouse Plaza

The Eisenhower East Small Area Plan envisions a comprehensive system of integrated conservation areas, multipurpose parks, and urban squares connected by naturalistic green paths along existing streams, tree-lined streets and green boulevards.

These improvements will enhance connections to regional park facilities such as Cameron Run Regional Park and the Mount Vernon trail which serves both recreational users and commuters.

Real Estate | Improvements | Plat(s)
A13. Plat(s): attach plat(s) of Site and label according to section.

See attached plats with the file name:
A13. Alexandria Site_Plats

Real Estate | Planning/Zoning | Designations

B1. Designation(s): identify Site's current planning/zoning designations(s)

The City has adopted the CDD, or Coordinated Development District, approach in the entire area surrounding the Site.

The CDD is used in areas where significant development is approved and is a highly flexible zoning designation. A CDD allows for a mixture of uses including residential, office, commercial, hotel, and retail, and supports an authentic urban environment offering daily amenities and recreational activities for employees, residents, and visitors. The main goal of the land use mix and density is to create a sense of place by introducing amenities necessary to support existing uses and to attract future uses and developments in the district. The CDD zoning also allows for transferring of land uses and square footage within the zone by right.

The larger vision for this area is defined by the Eisenhower East Small Area Plan. That plan, originally adopted in 2003, is in the process of being updated to allow for more density on various parcels, including those proposed for Amazon, recognizing the value of dense, urban development around Metro and transit corridors.

As a CDD, the site does not have FAR limitations.

Rather, the CDD identifies for each block the allowable gross square footage (AGSF), the predominant land use, maximum building height, and required retail. The CDD has built-in flexibility to allow transfers among the blocks and a process is currently underway that will add 6,000,000+ square feet of additional density, in recognition of the transportation infrastructure already in place.

Real Estate | Planning/Zoning | Rezoning

B4. Rezoning: must Site be rezoned for the Project's expected use?
B4.a. If Yes, outline rezoning process, including all government approvals, public hearings, and schedule. Please describe any opportunity to fast track.
B4.b. If Yes, will governments commit to rezoning prior to Site selection?

The Site will not need to be rezoned to accommodate the Project's expected use.

Phase I density and uses can proceed by-right with no regulatory approvals required. If additional square footage is needed beyond that which can be transferred within the CDD by right for future phases, there would need to be regulatory approval of a CDD Amendment. If a CDD Amendment is needed, it can be processed simultaneously with the development special use permit (DSUP), a permit required for the construction of new buildings. In the past, the City has processed CDD Amendments for prospective tenants prior to site selection, and that process can be used for this project.

Real Estate | Planning/Zoning | Neighboring Properties
B5.a. Designation(s): identify current planning/zoning designation(s) for Neighboring Properties.
B5.b. Permitted Use(s): briefly describe Neighboring Properties' permitted use(s).

The neighboring properties are also located within the Coordinated Development District (CDD) with designated land uses of residential, office, hotel, retail, and open space.

Permitted uses for neighboring properties are residential, office, hotel, and retail.

Real Estate | Environment

C1. Site and Improvements (if any)

C1.a. Prior Use(s): detail prior use(s) of Site (or portion of Site) in reverse chronological order.

C1.b.(i). Detail each environmental event occurring on Site (or portion of Site) in reverse chronological order. (Environmental events include – but are not limited to – any contamination, dumping, explosion, fire, landfill or spill of any kind or description)

C1.b.(ii). Describe any environmental cleanup or remediation occurring on Site (or portion of Site) as a result of an environmental event or otherwise in reverse chronological order. Please also include any environmental studies as supplemental information.

C1.c.(i). Detail each environmental study undertaken on Site (or portion of Site) in reverse chronological order.

C1.c.(ii). Provide copies of environmental studies performed on the site within the prior three years.

Site and Improvements:

Block 2
Currently asphalt paved parking lot

Block 3
Currently asphalt paved parking lot

Block 6A
An existing office building. This building will be fully renovated by 2019 with a complete redesign of the exterior façade and the inclusion of a retail component.

Block 6B
An existing office building with an attached retail component, including restaurants. The office building and adjacent retail is currently undergoing a full renovation.

Blocks 9A & 9B
Currently asphalt paved parking lot

Blocks 11 & 12
Currently asphalt paved parking lot

Blocks 24 & 25A
Currently a mixed-use development that includes a low-rise office building, parking garage, retail component, and industrial warehouse.

Block 32A
Currently asphalt and grass-covered lot

Prior Use(s):
Blocks 2 & 3
- 2005-present: paved parking lot
- 1974-2005: Warehouse building on site with commercial parking
- 1953-1974: Commercial parking
- Prior to 1953: Agricultural uses

Block 6A
- 1972-present: a 660,000 square foot office building
- Prior to 1972: vacant land

Block 6B
- 1969-present: a 345,000 square foot office building (attached retail center was added in 2004)
- Prior to 1969: vacant land

Blocks 9A & 9B
- 1970-present: paved parking lot
- Prior to 1970: agricultural land

Blocks 11 & 12
- 1970-present: paved parking lot
- Prior to 1970: agricultural land

Blocks 24 & 25A
- 1982-present: mixed-use buildings including office, retail, and warehouse and a parking structure/surface lot
- 1978-1982: Development and construction of current mixed-use buildings including office, retail, and warehouse and a parking structure/surface lot.
- 1953-1978: part of the City of Alexandria Landfill
- Prior to 1953: Vacant

Block 32A
- 1978-preset: grass-covered parking
- 1953-1978: part of the City of Alexandria Landfill

Environmental Event(s):
Block 2
There are no known Recognized Environmental Conditions on the property. A Phase I Environmental Site Assessment recommended additional testing prior to excavation to determine composition of previous grading of the property to its current elevation.

Block 3
There are no known Recognized Environmental Conditions on the property.

Block 6A
There are no known Recognized Environmental Conditions on the property

Block 6B
There are no known Recognized Environmental Conditions on the property.

Blocks 9A & 9B
There are no known Recognized Environmental Conditions on the property.

Blocks 11 & 12
There are no known Recognized Environmental Conditions on the property.

Blocks 24 & 25A
The properties were part of the City of Alexandria Landfill from 1953-1978. Subsurface investigation indicates that landfill materials extend to depths of 30-40 feet below existing grades. Previously a significant quantity of former landfill material was excavated and removed from that site during construction excavation, and remaining landfill materials beneath the builds was capped with clean fill and/or hardscape (asphalt, concrete, etc.). Development options include: 1) capping the landfill and driving piles through the landfill to create the structural base and the building above grade, or 2) excavation of the remaining landfill materials. The adjacent property to the north was redeveloped into the U.S. Patent and Trademark Office (USPTO) campus.

Block 32A
The properties were part of the City of Alexandria Landfill from 1953-1978. Subsurface investigation indicates that landfill materials extend to depths of 30-40 feet below existing grades. Previously a significant quantity of former landfill material was excavated and removed from that site during construction excavation, and remaining landfill materials beneath the builds was capped with clean fill and/or hardscape (asphalt, concrete, etc.). Development options include: 1) capping the landfill and driving piles through the landfill to create the structural base and the building above grade, or 2) excavation of the remaining landfill materials. The adjacent property to the north was redeveloped into the U.S. Patent and Trademark Office (USPTO) campus.

Environmental cleanup or remediation:
Block 2
No remediation is occurring at the property or is required.

Block 3
No remediation is occurring at the property or is required.

Block 6A
The building is currently under renovation which includes the removal of asbestos.

Block 6B
No remediation is occurring at the property or is required.

Blocks 9A & 9B
No remediation is occurring at the property or is required.

Blocks 11 & 12
No remediation is occurring at the property or is required.

Blocks 24 & 25
The former landfill has been capped with clean material and hardscape.

Block 32A
The former landfill has been capped with clean material and hardscape.

There have been many studies conducted on soils in the proposed site area when developing new buildings over recent years—many of the blocks were under ownership of the Hoffman Company, and appropriate records and reports are readily available.

The environmental efforts undertaken onsite are typical of urban conditions, and all development stakeholders have significant experience in this work.

Block 2
- December 2014: Phase I Environmental Site Assessment and Limited Subsurface Investigation

Block 3
None

Block 6A
- December 2017: Asbestos Study
- January 2016: Arsenic Report, Hazmat Survey, Phase I Environmental Study, Phase II Environmental Study
- July 1993: Phase I Environmental Study

Block 6B
- August 2015: Phase II Environmental Study
- January 2015: Phase I Environmental Study
- July 1998: Phase I Environmental Study

Blocks 9A & 9B
- October 1997: Phase II Environmental Study
- March 1996: Phase I Environmental Study

Blocks 11 & 12
- May 2010: Phase I Environmental Study
- October 1997: Phase II Environmental Study

Blocks 24 & 25A
- June 2016: Phase II Environmental Study
- March 2016: Phase I Environmental Study
- March 1996: Phase I Environmental Site Assessment
- October 1995: Phase II Environmental

Block 32
- March 2006: Phase I Environmental Site Assessment
- September 2004: Property was part of Virginia Department of Environment Quality's Voluntary Remediation Program (the property was issued and recorded a Certificate of Satisfactory Completion)

The complete catalog of studies is available upon request but are not attached here given the scale of the project and number of studies completed in past years.

Real Estate | Environment | Neighboring Properties

C2.a. Prior Use(s): detail prior use(s) of Neighboring Properties in reverse chronological order. Please include any environmental events. Please also include any environmental studies as supplemental information.

All properties surrounding the Site were previously vacant land that were developed into mixed-use buildings.

The property immediately north of Blocks 24 and 25A, where the U.S. Patent and Trademark Office campus is currently located, was previously part of the city's landfill.

Real Estate | Environment | Topography

C3.a. Elevation: identify Site's minimum and maximum topographic elevation. Please provide a topographic survey of Site, if available.

C3.b. Terrain: describe Site's terrain and Neighboring Properties' terrain:

C3.c. Wetlands: describe bodies of water, creeks, ditches, lakes, ponds, rivers and wetlands, and identify governing body or regulatory agency for each for Site and Neighboring Properties.
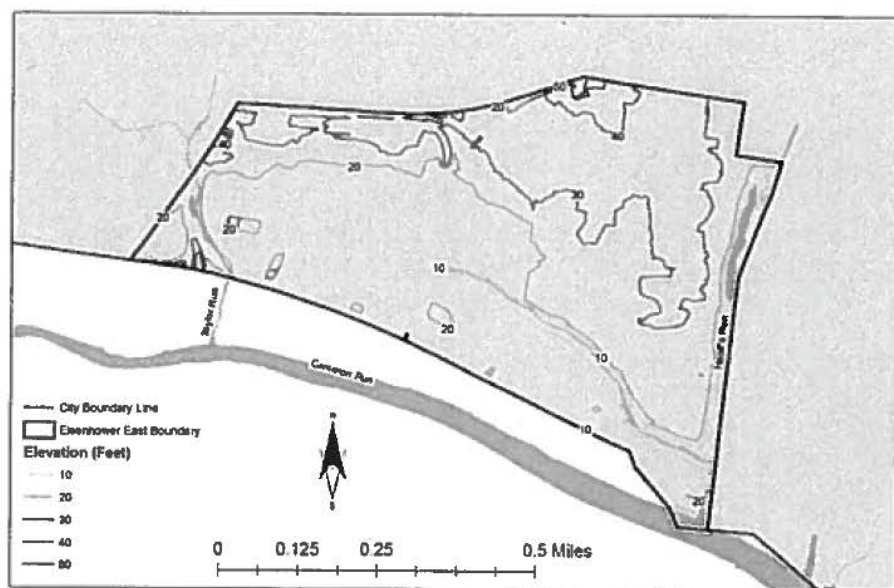
The topographic elevation of the area including the Project Sites ranges from sea level to 66 feet above sea level in the northwestern end of the property falling to an elevation of about 10 feet at the southeastern limit in the area of Old Cameron Run Channel.

The contour map above shows that stream banks are the lowest-lying areas in the neighborhood, and most of the land area is at least 11 feet above sea level.

The terrain contains a mix of buildings, structured parking, surface parking, public open space, and natural areas.

The topography in this area is gently falling at an average slope of 1%. This area has mainly developable property with a couple of small Resource Protection Areas around Old Cameron Run Channel and Hooff's Run. As seen in the figure above, publicly accessible park area has been incorporated into the streetscape and along stream beds. Other Alexandria neighborhoods surround the Site to the north, east, and west, and are similarly developed. The southern boundary is I-495 and Cameron Run.
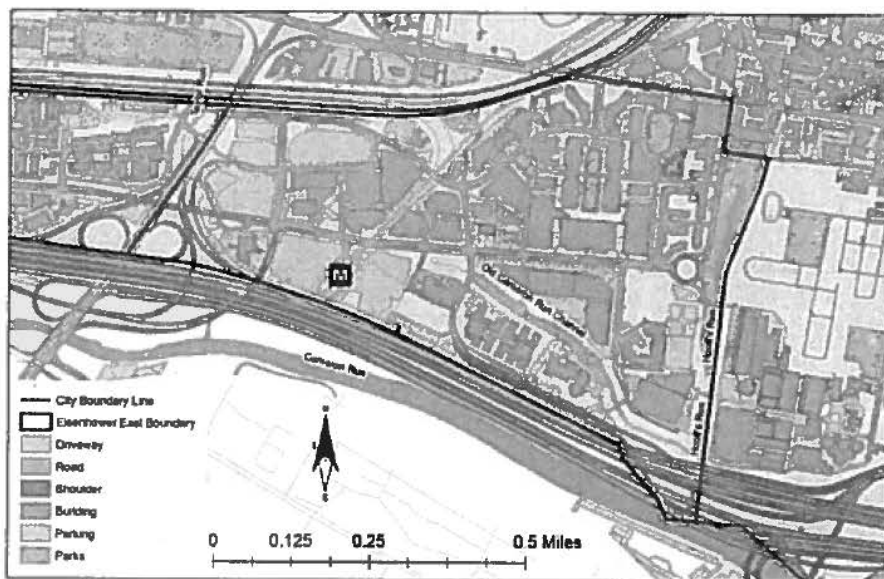
Four streams run through or near the proposed site area:

1. Cameron Run lies just south of I-495 and is a tributary to the Potomac River. This stream serves as the border to the City of Alexandria and Fairfax County.

2. Old Cameron Run feeds into Cameron Run, and publicly accessible greenspace is located along the southern steam bed.

3. Taylor Run also feeds into Cameron Run, and travels beneath the Telegraph Road/I-495 interchange.

4. Hooff's Run is located along the eastern border of the neighborhood, and runs through the African American Heritage Memorial Park.

The City administers the protection of wetlands to comply with applicable requirements during the site plan process. Given the urban nature of the area, it is anticipated that little to no impact for these features should arise during the site plan process.

Real Estate | Environment | Soils types for Site and Neighboring Properties
C4.a. Testing: describe any geotechnical or other testing that has been or will be completed on Site (or portion of Site)

Soil within the developable area consists of coarse gravel below, grading up into sand, silt and clay.

Significant soil testing has occurred with recent new buildings constructed, as well as testing by other agencies, like WMATA (Metrorail), when expanding or constructing Metro.

Additional testing occurs with each new project and is included in existing Phase II environmental studies on some of the development blocks.

Real Estate | Environment | Studies Permit(s)

C5.a. Specify all required environmental impact assessments and other environmental studies, and name relevant regulatory agency or agencies.

C5.b. Specify all required environmental permits, and name each government issuer of same. Can the environmental and building permits be integrated? Include a timetable for approvals.

As part of the City's site plan review process, developers are required to provide plans to manage or control for a variety of environmental factors.

These include: stormwater and sanitary sewer management, erosion and sediment control, and environmental hazard mitigation. If environmental investigations determine that an environmental site assessment (ESA) is required this study and the development of any subsequent management plans would be completed concurrent with the site plan review process. The regulatory agency is the city's Department of Transportation and Environmental Services (TES).

The City of Alexandria would require the following permits:

- Stormwater Management
- Erosion and Sediment Control

Environmental permits are identified during the preliminary site plan review process which typically takes eight to 10 months to complete. Permits are approved during the final site plan review process which includes multiple city departments that makes up the City's Interdepartmental Review (IDR) team. The final site plan stage is typically a 6-8-month process depending on the size and complexity of the project.

Building permits are issued following approval of any required special use permits and the final site plan which includes detailed engineering drawings. Alexandria will commit to the creation of a dedicated interdepartmental team of city staff as a subset of the established IDR team to ensure the Project's development review and approval process is expedited.

Environmental Permits Issued by Commonwealth of Virginia or Federal Government

- The Virginia Pollutant Discharge Elimination System regulates stormwater management related to construction activity. This program is administered at the local level by the City of Alexandria.

- For sites with contamination that may require de-watering during construction developers can also choose to enroll their remediation effort into the Virginia Voluntary Remediation Program (VRP). The Virginia Department of Environmental Quality (VDEQ) must then review and approve a Remedial Action Plan developed by the developer and ensure appropriate levels of contamination clean-up have occurred using established VRP clean-up guidelines. Once all the requirements of the VRP have been met, and the remediation is satisfactorily completed, VDEQ issues a "Certification of Satisfactory Completion of Remediation."
- If there is no site contamination, direct impacts to stream and jurisdictional wetlands, or floodplain issues, no environmental approvals would be needed by Virginia or the Federal Government.

As noted above, environmental permits are issued as part of the preliminary site plan review process.

If during the preliminary review it is determined that an environmental site assessment (ESA) is required, Phase I and II of the ESA process would occur concurrent with the review and approval of the development permit and final site plan. In total, this process takes approximately 14-18 months to complete.

Costs associated with building permits are included later in the document.

Real Estate | Environment | Code(s), Regulations

C7.a. Include with your response a copy of the relevant state and local environmental code(s) and regulations. (Federal statutes and regulations need not be included with your response.)
C7.b. Are amendments to the relevant environmental code(s) and regulations pending or proposed?
    If Yes, please provide detail

See attached environmental codes with the file name:
C7.a Alexandria Site_Environmental Codes and Regulations

Are amendments to the relevant environmental code(s) and regulations pending or proposed?
☒ No

C8. Noise Restrictions: detail all noise restrictions or limitations affecting Site and any exceptions to or exemptions from same. Attach the appropriate statutory and other authorities.

There are no noise restrictions or limitations on the activity of a business operating in this area of the City.

The City of Alexandria Code (Section 11-5-4) sets out restrictions and limitations of construction activities including the operation of construction devices and power equipment. Construction activities and operations are prohibited during the following hours:

- Monday through Friday: 0700 to 1800
- Saturday: 0900 to 1800
- Sunday: Prohibited all hours

Construction activities and operations are also prohibited during the following holidays: New Year's Day (the first day of January), Memorial Day (the last Monday in May). Independence Day (July 4), Labor Day (the first Monday in September), Thanksgiving Day (the fourth Thursday in November), and Christmas Day (December 25).

Applications for relief from noise restrictions are outlined in the City Code under Section 11-5-7 and may be made to the city manager or his duly authorized representative. The City of Alexandria is committed to working with the Project if it is determined that regulatory relief is needed.

Real Estate | Building

D1. Permits: specify all required building permits, and name government issuer of same.

Required Building Permits would include:

- Demolition
- Building
- Fire Protection
- Mechanical
- Electrical
- Plumbing
- Gas
- Sign
- Certificate of Occupancy

All building permits are issued by the City of Alexandria.

Real Estate | Building | Process

D2.a. Briefly describe the building permit process, from pre-application discussions to final action, including any appeal periods.

D2.b. Briefly describe the estimated cost to obtain a building permit for the project. Please attach a copy of the building permit ordinance.

The culture within the City of Alexandria's Department of Code Administration is to be part of the development team to help developers, design professionals, and contractors understand the City of Alexandria's permit process and support the timely development of projects.

The building permit process begins with a preconstruction meeting to discuss and provide the following items:

- Outline of the process from start to finish, including which departments will be involved and the typical timeline for your project
- Facilitate interdepartmental coordination to help reduce potential obstacles and project issues
- Discuss code requirements
- Discuss how the Virginia Construction Code applies to your Project
- Explain documents and drawings required for permits
- Offer a single point of contact throughout the Project

After the initial preconstruction meeting, an Advance Review is available at an additional cost of $0.09 per square foot not to exceed $10,000. During the Advance Review, design professionals can submit 90% code drawings for review by our team in parallel with the site plan review process. This allows the design professionals time to incorporate any code comments into their final sets of drawings while the site plan is being completed and approved. Once the comments are incorporated, the plans can be formally submitted to all other city agencies for review.

Plan submissions will include all trades with the exception of fire protection systems which will be submitted as a shop drawing by the subcontractor. All other trades will be reviewed at the time of submission. Upon approval of the final submissions by the Planning & Zoning and Transportation & Environmental Services departments, Code will perform a final review, confirm compliance, and issue the building permit.

Permits are part of an administrative reviews that is conducted by larger, professional building inspection teams. Because this process specifically reviews for code compliance and life safety, there is no appeals process.

The exact cost for fees associated with building permits and certificates vary depending on the project.

The Project would be subject to the following building permit fees:

- New Construction Fee - $7.30 per $1,000 of the estimated construction cost
- Building Permit Fee - 32.2% of the new construction fee (this percentage represents a cumulative total of all applicable building permit fees)

The City enforces the Virginia Uniform Statewide Building Code, which can be found at:
https://codes.iccsafe.org/public/collections/VA

Real Estate | Building | Process

D3. Timetable: outline the timetable for a building permit process for a project such as that proposed by the Project and include whether the community can commit to a timetable for approval.

The plan review timeline by the Department of Code Administration for the construction of a typical office building is 20 working days and 15 days for revisions.

The Department has a 99% success rate within these time frames. Additional resources are available to expedite the plan review process to meet a more aggressive schedule if required by the Project.

Real Estate | Building | Process | Restrictions
D4. Restrictions: outline any height restrictions relevant to Site.

The CDD does not have a height restriction.

This area is outside the flight path servicing Reagan National Airport.

Real Estate | Utilities

E. For each of the following utilities/services, list the name of the utility/service provider, the person assigned to work with the Project and the relevant contact information for that person.

- Water
- Wastewater
- Electricity
- Natural Gas
- Solid Waste
- Drainage/Storm Water
- Telecommunications
- Broadband

Water
Virginia American Water: Lauren Sufleta 703-706-3835

Wastewater
City of Alexandria: Erin Bevis-Carver 703-746-4154
Alex Renew: Karen Pallansch 703-549-3381

Electricity
Dominion Electric: Ken Holmes at 703-838-2478

Natural Gas
Washington Gas: Pat Estrada-Palma at 703-750-5657

Solid Waste
City of Alexandria: Erin Bevis-Carver 703-746-4154

Drainage/Storm Water
City of Alexandria: Shanna Austin 703-746-4063

Telecommunications
Comcast Communications: Marie Schuler at 703-567-4488

Broadband
Level3, AboveNet, Jones Communications, MCI

Real Estate | Utilities | Cost: Water

E1. Water: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned.
E1.a.(i). Impact Fee
E1.a.(ii). Extension of water line(s)
E1.a.(iii). Installation of water line(s)
E1.a.(iv). Tap Fee(s)
E1.a.(v). Other relevant fees and assessments

Virginia American Water is the water service provider.

There is a fully developed water distribution system already in place which includes a 12" main line under the north side of Eisenhower Avenue. Since Eisenhower Avenue bisects the proposed development area, the distance from the main line to the location of construction will be approximately 1-2 city blocks. There are no capital improvements planned at or around the site.

The proposed initial project phasing is for immediate occupancy in two existing newly renovated office buildings. As such, there are no anticipated additional costs to enhance water connectivity or distribution.

For new construction, fees would be determined on a site-specific basis based on the distance to the distribution system, line and meter size, and other specific building requirements. To provide some order of magnitude, the recent cost associated with the installation/connection of domestic service lines, meters, and fire services for a new 100,000 square foot office building in Alexandria was $70,000. This does not include the costs for permits.

No impact fees.

This cost for extension of water lines is determined based on an analysis of site-specific needs and conditions depending on the distance required to connect to an existing water main.

As noted above, the existing water main servicing the proposed site area is under Eisenhower Avenue so the distance of most extensions will be approximately 1-2 city blocks. The average cost to extend the water main is approximately $220-$250 per linear foot for a 12" pipe.

Installation of water lines is undertaken on a site-specific basis for a development project and is incorporated into the overall development project cost.

No tap fee(s).

Real Estate | Utilities | Cost: Wastewater

E2. Wastewater: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned.
E2.a.(i). Impact Fee
E2.a.(ii). Extension of sewage line(s)
E2.a.(iii). Installation of sewage line(s)
E2.a.(iv). Tap Fee(s)
E2.a.(v). Other relevant fees and assessments

There are three sanitary sewer components where capacity must be taken into consideration:

- Local City-owned sanitary collector sewers
- Alexandria Renew Enterprises (AlexRenew) interceptor sewer
- AlexRenew wastewater treatment facility

Staff analysis indicates there will be sufficient capacity in the interceptor sewer and at the wastewater treatment facility to handle the additional flows from this project.

The City of Alexandria's multi-year capital improvement program includes approximately $400 million to improve the combined sewer outfalls, which will provide a major benefit to this site. Capacity of the local City-owned sewers is determined at the development site plan (DSP)/development special use permit (DSUP) stage. Some additional sewers or upsizing of local collector sewers may be required to serve the project.

No impact fees.

Local/onsite collector sewers will need to be analyzed and sized appropriately as part of the development plan for the extension of sewage lines and installation of wastewater lines.

Developments are subject to the City's sanitary sewer connection (tap) fees that are required for all connections to the sanitary sewer system. Sanitary sewer tap fees are reviewed on an annual basis.

See attached sanitary sewer tap fees with the file name:
E2.a(iv) Alexandria Site_Sanitary Sewer Tap Fees

Real Estate | Utilities | Cost: Electricity

E3. Electricity: Please provide name of service provider, distance to Site, if dual feed available, capacity of line and system (including peak usage), and any capital improvements planned.
E3.a. What is the expected proportion of renewable energy in the utility's generation mix over the next 20 years?
E3.c. What options are currently available to purchase power at Site on the open market?
E3.d. What is the cost per kWh?

The electricity service provider is Dominion Energy.

The utility is headquartered in Richmond (108 miles away), with a regional operations center in Herndon (27 miles away) and a local operations office for repairs and construction in Alexandria.

- Dual feeds are available as part of site development, and the Carlyle substation is 1.1 miles from the Project Site. Dominion Energy Virginia has proposed a new 230kV or reconductering of existing 230kV transmission line to eliminate generation deficiency reliability in area.

- Dominion routinely evaluates needs for capital improvements to our system and is constantly upgrading areas of need. There is also new legislation, The Grid Transformation and Security Act, that is being reviewed at the state level with provisions to further upgrade and modernize the electric grid.

- The Alexandria site will likely need additional electric distribution infrastructure construction to support increased density and building height.

According to Dominion's 2017 Integrated Resource Plan (IRP), the company forecasts between 5,280 and 5,760 MW of renewables in 2035 (18 years from now).

These amounts represent 22%-24% of Dominion's projected total capacity of 24,244 MW in 2035. Alexandria's Eco-City Environmental Action Plan establishes a goal of 50% of the City's energy portfolio to consist of renewable energy sources by 2030.

To support the Project's goal to use 100% renewable energy the City and developers propose implementing a combined heat and power (CHP) district energy (DE) system.

This would include an on-site electricity generation operation using natural gas turbines or a steam boiler/turbine system with integration of applicable renewable electricity generation and on-site energy storage technologies. As applicable, renewable fuel feedstocks (i.e. biomass, etc.) may be usable for on-site electricity generation. Recovering heat rejection from the natural gas turbines or steam boilers/turbines, in combination with heat recovery from any significant data center operations in the company's facilities, and possible heat recovery from localized urban systems (i.e. sewerage flows, etc.), will support the production of hot water/steam and chilled water through absorption cooling technologies to distribute to the company's campus of facilities. This distribution and use of hot water/steam and chilled water supports minimizing local production of facility heating and cooling at Project facilities. The proposed configuration would potentially provide a micro grid configuration for full electricity support of critical company facilities. A proposed CHP-DE system to support the Project's facilities would significantly enhance facility efficiency, reduce overall energy loads, and provide lower cost operations.

Additionally, Dominion Energy Virginia currently offers the following programs for renewable energy rates and programs:

Solar Partnership Program (SPP)

The SPP is a demonstration program in which the Company is authorized to construct and operate up to 30 MW (DC) of Company-owned solar DG facilities on leased commercial and industrial customer property and in community settings. This is intended as a five-year demonstration program to study the benefits and impacts of solar DG on targeted distribution circuits. More information can be found on the Virginia State Corporation Commission website under Case No. PUE-2011-00117 and on the Company's website:
https://www.dom.com/large-business/renewable-energy-programs/solar-partnership-program.

Green Power Program®

The Company's Green Power Program® allows customers to promote renewable energy by purchasing, through the Company, RECs in discrete blocks equal to 100% of their usage or a portion of their usage. The Company purchases and retires RECs on behalf of participants. More information can be found on the SCC website under Case No. PUE-2008-00044 and on the Company's website:
https://www.dom.com/home-and-small-business/ways-to-save/renewable-energy-programs/dominion-green-power.

Renewable Energy (Third-Party PPA) Pilot

The Renewable Energy Pilot Program allows qualified customers to enter into a Power Purchase Agreement ("PPA") with a third-party renewable energy supplier. The energy supplied must come from a wind or solar generator located on the customer's premise. More information can be found on the SCC website under Case No. PUE-2013-00045 and on the Company's website:
https://www.dom.com/large-business/renewable-energy-programs/renewable-energy-pilot-program.

Net Metering

Net Metering allows for eligible customer generators producing renewable generation to offset their own electricity usage consistent with Va. Code § 56-594 and SCC regulations governing net metering in the Virginia Administrative Code (20 VAC 5-315-10 et seq.) and on the Company's website:
https://www.dom.com/home-and-small-business/ways-to-save/renewable-energy-programs/net-metering.

In addition, offsite physical, virtual/synthetic utility-scale solar or wind renewable energy generation sources may be available as outlined in Renewable Energy Buyers Alliance. The project site may have opportunity to generate on-site renewable energy up to approximately 5-10% of total electrical needs. District energy, geothermal exchange, multi-generation micro grid, and battery storage opportunities may be available for on-site renewable energy or equivalent generation to meet site loads.

Dominion Energy Virginia currently offers a Market-Based Rate Pilot on a voluntary, experimental basis as MBR Rate Schedules.

The MBR Rate Schedules will reflect market-based pricing for generation service in the PJM wholesale market. The MBR Rate Schedules will be billed as companion rate schedules to the Company's traditional Rate Schedules GS-3 and GS-4.

The commercial electricity rate is on average $0.0816 /kWh.

Real Estate | Utilities | Cost | Natural Gas

E4. Natural Gas: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned. Include any costs to the Project.

The Natural Gas service provider to the Site is Washington Gas, and the Site features 2", high-pressure gas service to area.

There are no capital projects currently planned for area.

Real Estate | Utilities | Telecommunication & Broadband

E5.a. Provider(s) - Name and describe providers of telecommunications (including cellular coverage) services to Site, and all high-speed data links available to Site.

E5.b. Fiber maps/routes

E5.c. Estimated cost of dark fiber lease/ownership

E5.d. Is any telecommunication license required for dark fiber install or use?

E5.e. Process to install new fiber lines to reach Site

Telecommunications and Wireless Networks:

- Comcast Communications is the incumbent cable TV franchise holder, offering a full range of services, including metro Ethernet, Public switched telephone networking and high-capacity fiber-based business services.

- Verizon Wireless, AT & T Wireless, Sprint Wireless, and T-Mobile Wireless all provide full 4G/LTE wireless coverage in National Landing and the Northern Virginia region.

Broadband/Fiber Carriers:

- AiNET is a fully integrated fiber engineering and construction company with thousands of fiber miles of capacity in the MD/DC/VA area. The company operates a 24/7/365 Secure Network Operations Center and meets all FISMA certification and accreditation requirements. All AiNET services are available lit, dark, or available for interconnection to AiNET data centers or the >1200 carrier partners. Services are available on GSA Schedule 70.

- Atlantech Online, Inc. is a Telephone and Internet Service Provider headquartered in Silver Spring, MD. The company provides telephone service, hosted phone service, high speed Internet connectivity services (T1, DS3, EoC, Ethernet and DSL), data networking services, web site hosting, dedicated and managed server hosting and collocation services. Atlantech owns and operates two data centers in the Washington, D.C. area. Atlantech's 800 Gigabit per second fiber backbone has the scale to support a wide variety of telecommunications solutions as its customers' networks evolve.

- FiberLight's best-of-breed Ethernet technology is built over its wholly-owned, $1 billion, diversely-constructed optical ring topology network covering growing metros in the South, Southwest, and Mid-Atlantic regions. Companies seeking mission critical, high performance network services including Ethernet, Wavelengths, Dedicated IP, SONET, and Dark Fiber turn to FiberLight for customized solutions. FiberLight delivers scalability, low latency, redundancy, limitless bandwidth, and secure transport to major commercial hubs, data centers, collocations, LANs, WANs, and cloud-enabled services.

- LIT Networks is a partnership of seven regional fiber networks from Virginia to Georgia that provides seamless optical transport to the major peering points in the southeast. This unique partnership of regional networks offers a high level of diversity for enterprise customers looking to connect with US Carriers, International Carriers, and wireless tower sites. LIT Networks is a dark fiber network that uses a common transport platform, which increases the value of its member networks by extending their ability to reach unserved and underserved markets.

- Lightower is a premier service provider of dark fiber and advanced network services including Ethernet, Wavelength, Dark Fiber, IP, SONET, and more.

- Metropolitan Network Services offers dark fiber and Ethernet services in and around the Arlington County, Virginia area. The network is comprised of three sections all located within the Northern Virginia Region: Rosslyn, Ballston, and the City of Alexandria. All locations can easily be connected to all of the major communication carriers in the area.

- Windstream provides phone, high-speed Internet and digital television services. The company also offers a wide range of IP-based voice and data services and advanced phone systems and equipment to businesses and government agencies.

- Zayo Metro provides Communications Infrastructure services, including fiber and bandwidth connectivity, colocation and cloud services to the world's leading businesses. Customers include wireless and wireline carriers, media and content companies and finance, healthcare and other large enterprises.
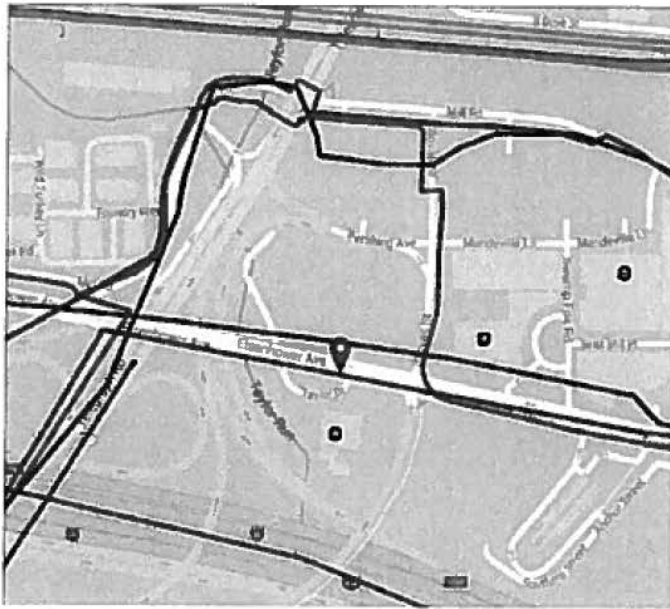
FiberLocator

2461 Eisenhower Avenue, Alexandria, Virginia, 22314

- Lit Buildings

Metro Networks
- AiNet
- Atlantech Online
- Atlantic Broadband
- Fiberlight
- Lightower Leased
- Metropolitan Network Services
- Windstream
- Zayo Metro
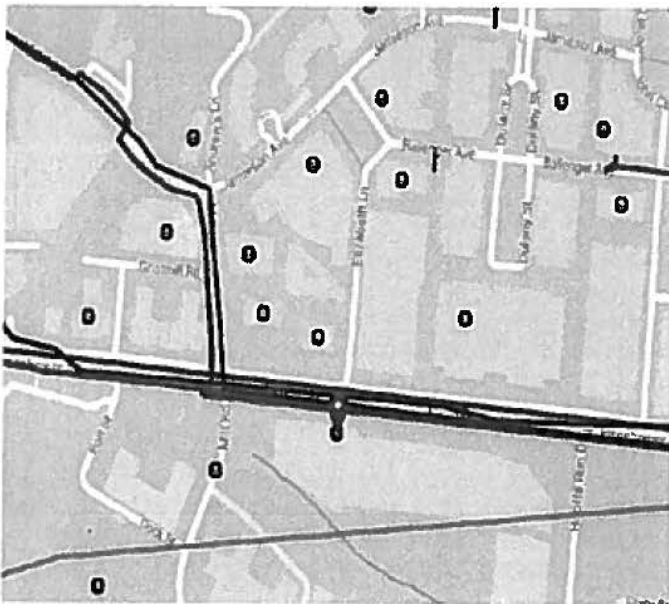
FiberLocator

2035 Eisenhower Avenue, Alexandria, Virginia, 22314

- Lit Buildings

Metro Networks
- AiNet
- Atlantech Online
- Atlantic Broadband
- Fiberlight
- LT Networks
- Lightower Leased
- Metropolitan Network Services
- Windstream
- Zayo Metro

Long Haul Networks
- CenturyLink Long Haul
- Hudson Fiber LH Leased
- Level 3 Long Haul
- Sprint Long Haul
- Telia Carrier
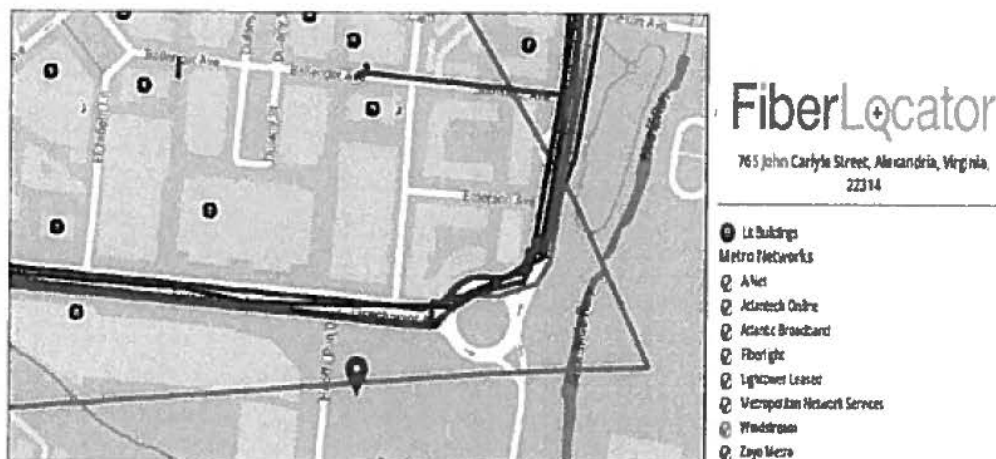
FiberLocator

765 John Carlyle Street, Alexandria, Virginia, 22314

- Lit Buildings
- Metro Networks
- AiNet
- Atlantech Online
- Atlantic Broadband
- Fibrelight
- Lightower Leased
- Metropolitan Network Services
- Windstream
- Zayo Metro

Estimated cost of dark fiber lease/ownership:
Pricing for private providers varies based on market conditions.

Is any telecommunication license required for dark fiber install or use?
Only public utilities may install in the public right of way. Fiber installation on private property requires a construction permit.

Process to install new fiber lines to reach Site:
This would be coordinated with the developer of each block.

Real Estate | Transportation | Air

F1.a. Nearest Airport: name, distance to Site, number of passenger carrier service providers. Also include any planned, funded and approved capital improvements to the airport.
F1.b. Detail daily scheduled service, including flights to Seattle, New York City, San Francisco/Bay Area, and Washington, D.C.
F1.c. Next nearest Airport

Northern Virginia is served by two major airports, both among the top 100 worldwide in commercial passengers.

Dulles International Airport ("Dulles") and Ronald Reagan Washington National Airport ("National"). Metrorail provides existing service to National on the Blue and Yellow Lines, and will begin serving Dulles in 2020 via the Silver Line.

The nearest airport to Alexandria is Ronald Reagan Washington National Airport, which is 5.2 miles away. From the Alexandria site, drive time to the airport is approximately fifteen minutes, and the airport is easily accessible via Metro with a travel time of less than ten minutes (three stops on the Yellow line from Eisenhower Avenue).

National Airport:

Located in Arlington County, 10 passenger carrier service providers operate through National, providing 416 daily departures to 95 domestic and international locations. Daily non-stop flight schedules include an average of two flights to Seattle, 33 flights to New York City, and two flights to San Francisco.

Significant planned improvements to National:

- Project Journey: a $1 billion multi-year project that includes construction of two new security checkpoints that fully connect the concourse level of Terminal B/C to airline gate areas, buildout of an enclosed commuter concourse to replace the 14 outdoor gates currently serviced by buses from gate 35X and future improvements to roadway and parking configurations.

Daily non-stop flight schedules include an average of two flights to Seattle, 33 flights to New York City, and two flights to San Francisco. This link provides more detail on flights from National, including time of day and airline information.
http://www.flyreagan.com/dca/flight-guide

DEPARTURES FROM RONALD REAGAN NATIONAL AIRPORT
Weekly flight schedules to select cities (based on July 2018 flight schedules)

Flights to New York City

DCA to EWR   198 Miles   ~1h 5m   2 Airlines

Airline	Flight #	Depart DCA	Arrive EWR	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	4348	6:55 AM	8:00 AM	•	•	•	•	•	•		Y
United	4241	8:30 AM	9:32 AM	•	•	•	•	•		•	Y
United	4281	11:00 AM	12:07 PM	•	•	•	•	•	•	•	Y
United	4402	2:36 PM	3:52 PM	•	•	•	•	•	•	•	Y
United	4049	5:00 PM	6:09 PM	•	•	•	•	•	•	•	
United	4254	5:45 PM	7:09 PM	•	•	•	•	•	•	•	
United	4195	6:59 PM	8:06 PM	•	•	•	•	•		•	
United	4081	9:30 PM	10:43 PM	•	•	•	•	•		•	

DCA to JFK   212 Miles   ~1h 31m   18 Airlines

Airline	Flight #	Depart DCA	Arrive JFK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	5877	6:00 AM	7:16 AM	•	•	•	•	•	•	•	Y
Delta	5878	9:00 AM	10:15 AM	•	•	•	•	•	•	•	Y
Aerolineas Argentinas	7029	10:00 AM	11:15 AM	•	•	•	•	•	•	•	
Delta	5904	11:00 AM	12:17 PM	•	•	•	•	•		•	Y
American Airlines	4332	12:50 PM	2:21 PM	•	•	•	•	•	•	•	Y
Delta	5951	2:00 PM	3:30 PM	•	•	•	•	•	•	•	Y
American Airlines	4735	2:55 PM	4:11 PM	•	•	•	•	•	•	•	Y
Delta	5896	5:07 PM	6:45 PM	•	•	•	•	•	•	•	Y
American Airlines	252	5:50 PM	7:33 PM	•	•	•	•	•	•	•	Y
American Airlines	4350	6:51 PM	8:15 PM	•	•	•	•	•	•	•	Y

DCA to LGA   214 miles   ~1h 04m   2 Airlines

Airline	Flight #	Depart DCA	Arrive LGA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta/American Airlines	6132/4756	6:00 AM	7:06 AM	•	•	•	•	•			Y
Delta/American Airlines	6134/2144	7:00 AM	8:16 AM	•	•	•	•	•			Y
Delta/American Airlines	6136/2125	8:00 AM	9:32 AM	•	•	•	•	•	•		Y
Delta/American Airlines	6138/4755	9:00 AM	10:32 AM	•	•	•	•	•	•	•	Y
American Airlines	4757	10:00 AM	11:25 AM	•	•	•	•	•	•		
Delta	6140	11:00 AM	12:19 PM	•	•	•	•	•		•	
American Airlines	2135	12:00 PM	1:15 PM	•	•	•	•	•	•	•	
Delta	6142	1:00 PM	2:16 PM	•	•	•	•	•	•	•	
Delta/American Airlines	6144/4767	2:00 PM	3:22 PM	•	•	•	•	•	•	•	Y
Delta/American Airlines	6146/4750	3:00 PM	4:21 PM	•	•	•	•	•		•	Y
Delta	6148	4:00 PM	5:34 PM	•	•	•	•	•		•	Y
Delta/American Airlines	6150/4764	5:00 PM	6:23 PM	•	•	•	•	•		•	Y
American Airlines	6152/4752	6:00 PM	7:20 PM	•	•	•	•	•		•	Y
Delta/American Airlines	6154/4753	7:00 PM	8:20 PM	•	•	•	•	•		•	Y
American Airlines	2117	10:00 PM	11:04 PM	•	•	•	•	•		•	

Flights to Seattle

DCA to SEA   2,321 miles   ~5h 45m   2 Airlines

Airline	Flight #	Depart DCA	Arrive SEA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Alaska Airlines	1	8:00 AM	10:45 AM	•	•	•	•	•	•	•	Y
Alaska Airlines	3	6:40 PM	9:25 PM	•	•	•	•	•	•	•	

Flights to San Francisco

DCA to SFO   2,435 miles   ~5h 59m   3 Airlines

Airline	Flight #	Depart DCA	Arrive SFO	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	2042	8:30 AM	11:35 AM	•	•	•	•	•	•	•	
Alaska Airlines	1002	5:30 PM	8:29 PM	•	•	•	•	•	•	•	Y

The next nearest airport to Alexandria is Dulles International Airport, 31.6 miles away. Dulles is approximately a 35-minute drive from Alexandria, and is currently accessible via the Silver Line and Washington Flyer bus, with full Metrorail service beginning in 2020.

Dulles airport serves 38 passenger carrier service providers, with 326 daily departures to 135 domestic and international locations.

Significant planned improvements to Dulles:

- Dulles Corridor Metrorail Project: a 23-mile extension of Washington's existing Metrorail System. It is being built in two phases by the Metropolitan Washington Airports Authority (MWAA). Phase 1 of the new line opened on July 26, 2014, connecting East Falls Church, Tysons, and Reston, Virginia's largest employment centers, with downtown Washington and Largo, Maryland. Known as the Silver Line, the extension is operated by the Metropolitan Washington Area Transit Authority (WMATA). Preliminary construction for Phase 2 began in 2014. It will run from the eastern edge of Reston west to Washington Dulles International Airport and to Ashburn in eastern Loudoun County. When both phases are complete, the line will provide a one-seat, no-transfer ride from Dulles to downtown Washington, creating long-sought-after connectivity between the rapidly expanding Dulles corridor and the nation's capital. The extension includes 11 new stations.

- Future Fifth Runway: space exists for an east-west runway approximately 10,500 feet long and 150 feet wide. It will be parallel to existing runway 12-30 near the south side of the Airport. Construction dates for the fifth runway will be set in the future. (Note: Land has been acquired and the runway was approved by the FAA. However, the project's funding and schedule have not been determined.)

Daily non-stop flight schedules include an average of five flights to Seattle, 16 flights to New York City, and 12 flights to San Francisco. This link provides more detail on flights from Dulles, including time of day and airline information:
http://www.flydulles.com/iad/flight-guide

DEPARTURES FROM DULLES INTERNATIONAL AIRPORT
Weekly flight schedules to select cities (based on July 2018 flight schedules)

Flights to New York City

IAD to EWR   211 Miles   ~1h 32m   6 Airlines

Airline	Flight #	Depart IAD	Arrive EWR	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	4933	6:00 AM	7:31 AM	•	•	•	•	•	•	•	
United	2250	8:15 AM	9:46 AM	•	•	•	•	•	•	•	Y
United	1811	12:32 PM	2:21 PM	•	•	•	•	•	•	•	Y
United	1972	5:20 PM	6:52 PM	•	•	•	•	•	•	•	Y
United	4965	7:14 PM	8:42 PM	•	•	•	•	•	•	•	
United	965	10:00 PM	11:29 PM	•	•	•	•	•	•	•	Y

IAD to JFK   227 Miles   ~1h 28m   22 Airlines

Airline	Flight #	Depart IAD	Arrive JFK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	4064	6:00 AM	7:28 AM	•	•	•	•	•	•	•	Y
JetBlue	1208	6:30 AM	7:44 AM	•	•	•	•	•	•	•	Y
Delta	3966	10:00 AM	11:14 AM	•	•	•	•	•	•	•	Y
JetBlue	1308	11:29 AM	12:44 PM	•	•	•	•	•	•	•	Y
Delta	3959	4:20 PM	5:53 PM	•	•	•	•	•	•	•	Y
JetBlue	1808	8:27 PM	9:59 PM	•	•	•	•	•	•	•	Y

IAD to LGA   228 miles   ~1h 17m   4 Airlines

Airline	Flight #	Depart IAD	Arrive LGA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	6255	8:15 AM	9:31 AM	•	•	•	•	•	•	•	Y
United	6055	12:35 PM	1:49 PM	•	•	•	•	•	•	•	Y
United	6334	5:08 PM	6:25 PM	•	•	•	•	•	•	•	Y
United	6337	10:05 PM	11:22 PM	•	•	•	•	•	•	•	Y

Flights to Seattle

IAD to SEA   2,298 miles   ~5h 55m   11 Airlines

Airline	Flight #	Depart IAD	Arrive SEA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	1838	7:05 AM	9:55 AM	•	•	•	•	•	•	•	
United	389	8:36 AM	11:07 AM	•	•	•	•	•	•	•	Y
Alaska Airlines	859	9:20 AM	12:15 PM	•	•	•	•	•	•	•	
United	357	12:36 PM	3:15 PM	•	•	•	•	•	•	•	
United	326	5:37 PM	8:12 PM	•	•	•	•	•	•	•	Y

Flights to San Francisco

IAD to SFO   2,412 miles   ~5h 52m   14 Airlines

Airline	Flight #	Depart IAD	Arrive SFO	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Alaska Airlines	1069	6:20 AM	9:05 AM	•	•	•	•	•	•	•	Y
United	1881	6:48 AM	9:40 AM	•	•	•	•	•	•	•	Y
United	424	8:18 AM	11:10 AM	•	•	•	•	•	•	•	Y
United	1763	9:15 AM	12:07 PM	•	•	•	•	•	•	•	Y
Alaska Airlines	1071	9:50 AM	12:30 PM	•	•	•	•	•	•	•	Y
United	525	12:40 PM	3:30 PM	•	•	•	•	•	•	•	Y
United	560	3:47 PM	6:24 PM	•	•	•	•	•	•	•	Y
United	340	5:16 PM	8:11 PM	•	•	•	•	•	•	•	Y
Alaska Airlines	1077	6:30 PM	9:25 PM	•	•	•	•	•		•	Y
United	1893	7:01 PM	9:55 PM	•	•	•	•	•	•	•	Y
United	2274	7:54 PM	10:39 PM	•	•	•	•	•	•	•	Y
United	225	10:00 PM	1:01 AM	•	•	•	•	•	•	•	Y

Baltimore-Washington International Airport ("BWI"):

Northern Virginia is also served by Baltimore-Washington International Airport ("BWI") in Anne Arundel County, Maryland. BWI is 43.3 miles from Alexandria. 19 commercial airlines serve BWI, providing 343 daily departures to 80 destinations. Daily non-stop flight schedules include an average of three flights to Seattle, eight flights to New York City, and seven flights to San Francisco, Oakland, and San Jose.

Significant planned improvements to BWI:

- Concourse D and E Connector Project: provides additional international airline capacity and new passenger services, including a new security checkpoint to serve domestic and international passengers. (page MAA-4)

- Concourse E Expansion Project: consists of extending the international terminal by 150 feet for six additional gates. (page MAA-7)

Additional projects may be found here:
http://www.mdot.maryland.gov/newMDOT/Planning/CTP/CTP_18_23_Final/MAA-1 MDOT Maryland Aviation Administration.pdf

Daily non-stop flight schedules include an average of three flights to Seattle, eight flights to New York City, and seven flights to San Francisco, Oakland, and San Jose. This link provides more detail on flights from BWI, including time of day and airline information. *https://www.bwiairport.com/flying-with-us/flights*

DEPARTURES FROM BALTIMORE-WASHINGTON INTERNATIONAL AIRPORT
Weekly flight schedules to select cities (based on July 2018 flight schedules)

Flights to New York City

BWI to EWR 169 Miles ~1h 20m 3 Airlines

Airline	Flight #	Depart BWI	Arrive EWR	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	4067	6:00 AM	7:07 AM	•	•	•	•	•	•	•	
United	4100	10:42 AM	11:50 AM	•	•	•	•	•	•	•	Y
United	4373	2:40 PM	4:10 PM	•	•	•	•	•	•	•	Y
United	4433	4:51 PM	6:11 PM	•	•	•	•	•	•	•	Y

BWI to JFK 183 Miles ~1h 23m 17 Airlines

Airline	Flight #	Depart BWI	Arrive JFK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	3431	6:35 AM	7:53 AM	•	•	•	•	•	•	•	Y
Delta	3612	10:45 AM	11:56 AM	•	•	•	•	•	•	•	Y
American Airlines	4001	12:36 PM	1:52 PM	•	•	•	•	•	•	•	Y
Delta	3944	5:00 PM	6:23 PM	•	•	•	•	•	•	•	Y

Flights to Seattle

BWI to SEA 2,327 miles ~5h 55m 3 Airlines

Airline	Flight #	Depart BWI	Arrive SEA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Spirit Airlines	263	7:20 AM	10:06 AM	•	•	•	•	•	•	•	
Southwest	546	2:25 PM	5:15 PM	•	•	•	•	•			
Southwest	5406	2:40 PM	5:25 PM							•	
Southwest	4263	3:30 PM	6:20 PM						•		
Alaska Airlines	765	7:15 PM	10:10 PM	•	•	•	•	•	•	•	

Flights to San Francisco, San Jose, and Oakland

BWI to SFO 2,450 miles ~6h 17m 5 Airlines

Airline	Flight #	Depart BWI	Arrive SFO	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	753	6:30 AM	9:47 AM	•	•	•	•	•	•	•	Y
Alaska Airlines	1127	5:25 PM	8:42 PM	•	•	•	•	•	•	•	Y
United	2059	6:55 PM	9:40 PM	•	•	•	•	•		•	Y

BWI to SJC 2,431 Miles ~5h 50m 1 Airline

Airline	Flight #	Depart BWI	Arrive SJC	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Southwest	2276	1:30 PM	4:15 PM	•	•	•	•	•			
Southwest	4222	2:50 PM	5:35 PM							•	
Southwest	4904	3:30 PM	6:20 PM						•		

BWI to OAK 2,439 Miles ~5h 47m 2 Airlines

Airline	Flight #	Depart BWI	Arrive OAK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Southwest	1613	9:00 AM	11:50 AM	•	•	•	•	•			
Southwest	5727	10:05 AM	12:50 PM						•		
Southwest	417	1:30 PM	4:20 PM	•	•	•	•	•			
Southwest	3179	2:20 PM	5:05 PM							•	
Spirit Airlines	583	3:05 PM	5:52 PM	•	•	•	•	•	•	•	
Southwest	4239	3:40 PM	6:30 PM						•		

Amtrak also provides excellent intercity passenger-rail connections from Northern Virginia, particularly to destinations in the northeast corridor (i.e., Baltimore, Philadelphia, New York City, and Boston).

Over 40 trains per day connect Alexandria's Amtrak station to/from New York's Penn Station, and over 100 trains per day connect New York to/from Washington's Union Station (including over 30 high-speed Acela trains per day).

Real Estate | Transportation | Roads

F2. Roads: describe road access to Site and any planned improvements. Include details of how employees may commute into Site via personal auto or rideshare. Use specific highway names, road names, bridges, etc.

Northern Virginia is the nexus of several major interstates, I-66 (east-west), I-95 (north-south), I-395 (connecting through D.C.) and I-495 (a beltway around the region). A comprehensive set of High Occupancy Toll (HOT) Express Lanes along I-66, I-95, I-495, and coming soon to I-395, offer more efficient freeway travel for drivers and transit passengers headed into, out of, and around the region. The following maps represent the commuting network around the Alexandria site, including major roads.

Alexandria Site Commuting Network
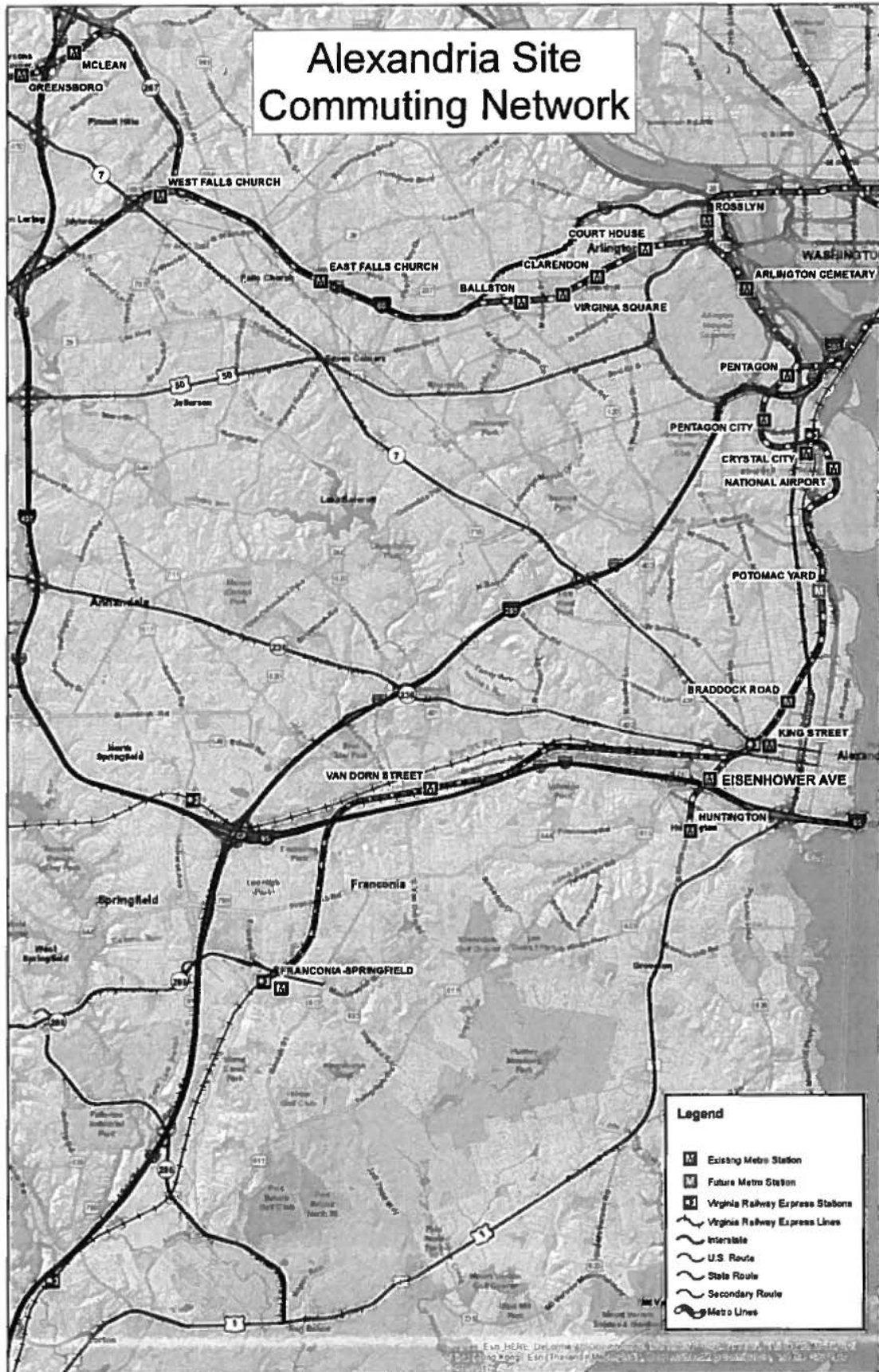
Northern Virginia strives to make commuting faster, safer, and more efficient for vehicles travelling on the region's roads.

A robust High-Occupancy Vehicle (HOV) lane network provides dedicated road lanes for cars with multiple riders per vehicle during peak hours, and over 90 miles of tolled Express lanes serve drivers willing to pay for less traffic on their trip. Together, these facilities result in faster travel on our regional interstates. In addition, the region nurtures strong vanpool and carpool communities. One example is Vanpool Alliance, a statewide initiative to increase the number of vanpools operating and vanpool occupancy through funding for both new vanpools and existing vanpools undergoing changes in ridership. This support comes in the form of up to $400 per van per month.

In addition, Northern Virginia has promoted a dynamic carpooling culture ("slug culture") on I-95—and increasingly, I-66—for over 40 years, with 6,570 daily "slugs" (self-initiated casual carpooling for commuting) in the I-95 corridor alone. CarpoolNow, a free metro-area carpooling app, uses incentives to encourage carpooling throughout the region. Northern Virginia is also home to active transportation network companies such as Uber and Lyft.

Virginia's park-and-ride lots enhance all aspects of Northern Virginia's transportation system.

These parking lots allow commuters, particularly long-distance commuters, to park their vehicles at a convenient location and then finish their commute using other transportation modes, such as carpool, vanpool, bus, train, bicycle, and walk. Northern Virginia features more than 110 park-and-ride lots containing a total of 57,000 parking spaces, with additional spaces being added.

As Virginia works to reduce congestion from every angle possible, managing and clearing incidents quickly and efficiently is another effort that the state takes seriously.

Virginia's extensive Safety Service Patrol and Incident Management team work on the front lines of every accident alongside emergency responders to facilitate and open lanes as quickly as possible. Virginia continues to improve equipment, processes, and relationships to clear accidents more quickly. Thanks to the advanced regional Metropolitan Area Transportation Operations Coordination (MATOC) system, Northern Virginia's clearance time is lower than the statewide average (see VDOT's incident management dashboard). In an ongoing focus on emergency response in the National Capital Region, VDOT is a key participant and often leader of regional tabletop exercises to continue to hone collaboration to keep the region moving, and is coordinating with the local jurisdictions on data sharing that would improve incident management.

Additionally, roadway operations in Northern Virginia benefit from some of America's most advanced Intelligent Transportation Systems and Integrated Corridor Management initiatives.

Interstates and other major roads benefit from advanced highway efficiency techniques such as dynamic speed limits and pricing, ramp metering, reversible and peak-hour lane reconfigurations, real-time multimodal trip time displays, transit signal priority, and more.

The Alexandria site has excellent roadway access and is served by both regional and local streets.

The site has direct full access to and from Interstate 495, the regional beltway that provides further access to Interstate 95 to the south, Interstate 66, Route 267 and the Dulles Access Road to the west, Interstate 270 and Interstate 95 to the north, and U.S. 50 to the east. Approximately 140,000 vehicles use I-495 near the Site every day. Other regional roads that provide access to the area include Route 236 (Duke Street) that extends west to Fairfax County, Route 611 (Telegraph Road) that connects Route 236 to Fairfax County to the south, and Route 1 which provides north-south connectivity and serves other major activity centers including Old Town Alexandria, North Potomac Yard, Ronald Reagan National Airport, and downtown Washington D.C.

Local streets include Eisenhower Avenue, which connects the site to west Alexandria, including the Eisenhower West area of the City, where additional mixed-use growth and density is planned by the City. Eisenhower Avenue is being redesigned to add additional capacity, improved pedestrian and bicycle facilities, and streetscape improvements. A well-formed street grid has been established within the site, and will continue to be expanded with future development, to help disperse vehicles and improve accessibility for all modes, including cars, transit, pedestrians, and bicycles. Alexandria has approximately $83.5 million in roadway and non-motorized related projects planned for the vicinity of the Alexandria site, which are in the City's 10-year Capital Improvement Program or the VDOT six-year plan, for additional improvements to the street network for multimodal transportation.

Planned roadway improvement projects near the Alexandria Site include congestion and safety improvements for Eisenhower Avenue (between Holland Lane and Mill Road), Duke Street (planned widening west of Diagonal Road to accommodate transit and non-motorized improvements) as well as a new street grid to accommodate planned redevelopment in Eisenhower East. Planned transit and non-motorized projects near the Alexandria Site include the Old Cameron Run Multi-Use Trail, VRE Alexandria pedestrian tunnel, pedestrian plaza, and bus loop improvements at the Eisenhower Avenue Metro Station and transit access/pedestrian improvements at the King Street Metro Station.

Real Estate | Transportation | Tram or Light Rail

F3. Tram or Light Rail: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
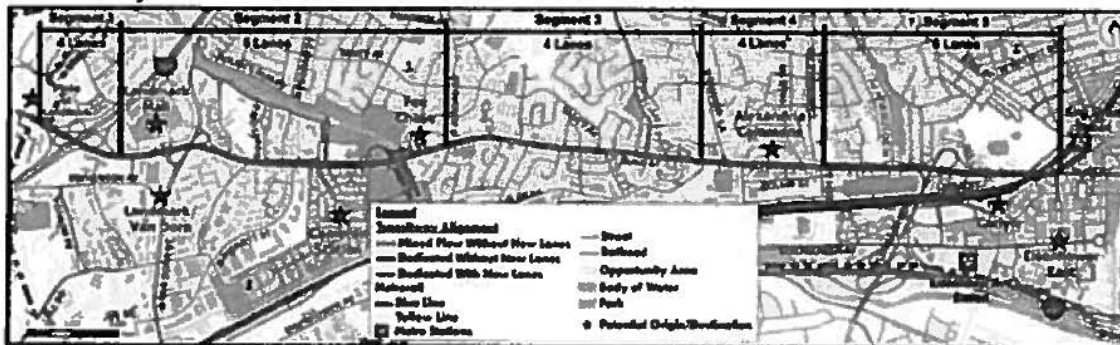
F3.a.(I). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure tram or light rail service to Site?

F3.a.(II). If Yes, provide letter of commitment and identify funding source(s).

While Northern Virginia has no tram or light rail service, it has one existing and two planned Bus Rapid Transit (BRT) systems, all of which feature or will feature dedicated lanes and stations, transit signal priority, and off-board fare collection.

The Alexandria site is planned to be served by Bus Rapid Transit (BRT) which will operate on Duke Street (Route 236) between the King Street-Old Town Metrorail Station and the City's west end, including the redeveloped Landmark Mall area, and potentially further west into Fairfax County. This BRT line is one of three existing or planned transit ways in the City. It will connect with the $143 million West End Transitway (Corridor C), currently being designed, which will operate between the Van Dorn Metrorail Station and the Pentagon. The Duke Street Transit Corridor will have frequent transit service (with 8-minute headways during weekday peak periods), operate in dedicated transit lanes, and include passenger amenities such as improved shelters, real-time information, off-board fare collection, and transit signal priority.

Preliminary recommendation for Corridor B:

Real Estate | Transportation | Metro or Subway

F4. Metro or Subway: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F4.a. Extension or new service commitment
F4.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure metro service to Site?
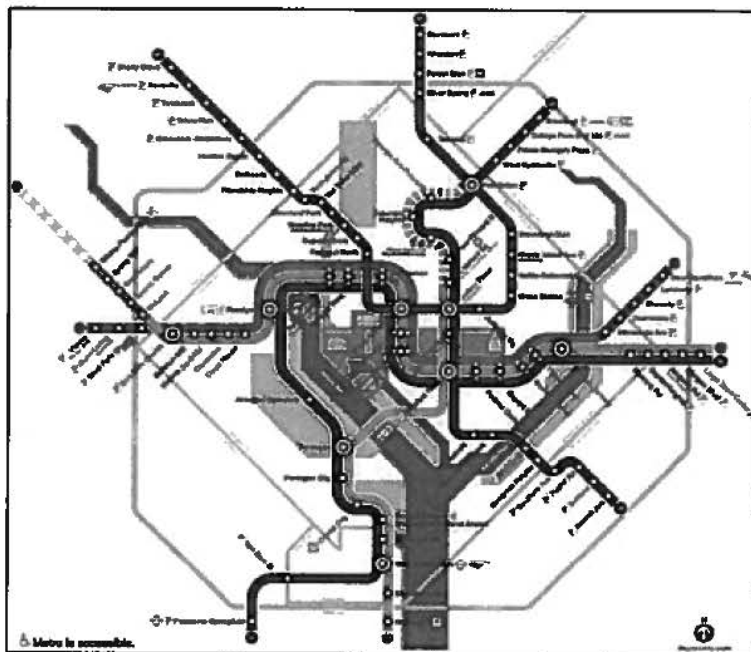F4.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Regional Overview

Metrorail, operated by the Washington Metropolitan Area Transit Authority (WMATA), is the backbone of transit service in Northern Virginia with four lines that serve and connect Arlington and Fairfax counties and the cities of Alexandria, Fairfax, and Falls Church to Washington D.C. and Montgomery and Prince George's counties in Maryland.

New Metrorail stations are being developed as part of an extension to the Metrorail Silver Line, and a Metrorail station at Dulles Airport will open in 2020. A new Metrorail station is opening at Potomac Yard in Alexandria in 2022.
Metrorail carries between 600,000 and 700,000 riders per day and historically has the third-highest ridership of urban rail systems in the United States, behind only New York and Chicago. In FY17, Metrorail provided 90 million rider trips in Northern Virginia.

A map of Metrorail's lines and stations is included above. Metrorail consists of approximately 118 route miles, 91 passenger stations, and a fleet of over 1,100 railcars. Of Metrorail's six lines, four of them - Silver, Orange, Blue, and Yellow - serve Northern Virginia.

Metrorail operates 5:00 am to 11:30 pm Monday through Thursday, 5:00 am to 1:00 am on Friday, 7:00 am to 1:00 am on Saturday, and 8:00 am to 11:00 pm on Sunday. During peak periods Metrorail trains arrive on individual lines in Virginia every 8 minutes, with double or triple service (every 3-4 minutes) where multiple lines run together on the same track. During off-peak times, trains arrive on individual lines every 12-20 minutes, with double or triple service on multiple-line segments. Metrorail fares vary by time of day and the distance between stations. The base Metrorail fare is $2.25 and the maximum one-way fare is $6.00. The Metrorail uses regional SmarTrip fare media, which allows seamless transfers between Metrorail and all public bus systems in the region.

Thanks to Metrorail's fully exclusive right-of-way, Metrorail trains generally enjoy speed and reliability significantly greater than surface transit systems such as light rail or bus rapid transit.

Although a maintenance backlog negatively affected reliability in recent years, WMATA's recent "SafeTrack" and "Back2Good" initiatives, coupled with delivery of nearly 500 new railcars, have considerably improved reliability since 2016.

Between 2008 and 2015, Metrorail had 20 "major vehicle failures" (failures preventing vehicle movement) per million vehicle revenue miles and 1.7 "other vehicle failures" per million vehicle revenue miles - the 6th and 3rd lowest rates, respectively, among major metro/subway systems (Source: Washington Post 2016). From October to December 2017, Metrorail system wide on-time performance was 87%. During the time period covering July 2017 to December 2017, on-time performance by Metrorail line in Virginia was 88% on the Blue Line, 89% on the Orange Line, 89% on the Silver Line and 93% on the Yellow Line. In addition to high on-time performance, rail fleet reliability (i.e., rail mean distance between delays) has increased by 25% over the last six months (ending December 2017) from 69,466 miles to 87,225 miles (source: WMATA Vital Signs Report for October-December 2017).

To bolster rail customer service satisfaction, WMATA recently introduced its "Rush Hour Promise" that automatically refunds fares to customers if a rush hour trip on Metro is delayed by 15 minutes or more.

More information about the Metrorail service is available through the links below.
- Rail service guide: https://www.wmata.com/service/rail/
- New rider guide:https://www.wmata.com/rider-guide/new-riders/upload/pocket-guide-English.pdf
- "Back2Good" operations improvement initiative: https://www.wmata.com/back2good
- "SafeTrack" 2016-2017 track upgrade initiative: https://www.wmata.com/service/SafeTrack.cfm

SafeTrack was an accelerated track work plan that ran from June 2016 to June 2017 to address safety recommendations and rehabilitate the Metrorail system to improve safety and reliability. Through SafeTrack, Metro completed approximately three years' worth of maintenance and rehabilitation work in approximately one year. The plan significantly expanded maintenance time on weeknights, weekends, and midday hours and included 16 "Safety Surges"—long duration track outages for major projects in key parts of the system.

With the conclusion of the SafeTrack emergency maintenance program in June 2017, Metro customers have experienced improvements in service reliability. In December 2017, 88% of trips (13.6 million trips) arrived on time based on actual customer "tap in/tap out" travel time data. Metro credits the accelerated delivery of the new and popular 7000-series railcars—combined with the retirement of all 1000- and 4000-series railcars months ahead of schedule, fewer track delays, improved railcar maintenance and recent schedule adjustments—with helping to keep customers on time. Each month, another 20+ new 7000-series railcars arrive, with 50 of the new 7000-series trains (400 railcars) now in service and 100% of the new 7000-series cars expected to be delivered by the end of FY18.

Metro's turnaround has been driven by the largest-ever annual capital investment in the system. The record setting $1.16 billion in capital funding spent in FY17, including $700 million in federal grant reimbursements, led to improved track infrastructure, railcar reliability, and escalator performance. Efforts to provide an additional $500 million per year are advancing in Virginia, Maryland, and Washington, D.C.

Dulles Corridor Metrorail Project (Silver Line extension)

The Dulles Corridor Metrorail Project will provide high-quality, high-capacity transit service in the Dulles Corridor and to provide a transit connection between the corridor, downtown Washington, and the Rosslyn-Ballston corridor in Arlington. The new Metrorail service (on the Silver Line) results in travel time savings and expands the reach of the existing Metrorail system, and offers a viable alternative to automobile travel and supports future development along the corridor.

Phase 1 of the project is complete and now provides Metrorail service from Washington, D.C., and Arlington County through Tysons to Wiehle Avenue on the eastern edge of Reston. Phase 2 is under construction now and will run from Reston west to Washington Dulles International Airport and beyond to Route 772/Ryan Road in Loudoun County, opening in 2020.

Potomac Yard Metrorail Station

Building a new Metrorail station is central to the vision for the redevelopment of Potomac Yard as a smart-growth, walkable, mixed-use community with access to high-quality retail, entertainment, and parks. The City of Alexandria is working with WMATA to construct a new infill Metrorail Station at Potomac Yard on the Blue and Yellow Lines that will open in 2022. The new Metrorail station will help to accommodate the growing transportation demand in the Route 1 corridor. The Metrorail station in Potomac Yard will provide benefits to the community and region by:

- Maximizing the number of people taking transit to and from the Potomac Yard area by providing direct access to Metrorail;
- Removing thousands of cars from the Route 1 corridor every day;
- Enabling a mix of uses in an environment where people can walk or bike to destinations in Potomac Yard for their daily needs;
- Providing a vibrant destination for all Alexandrians with a mix of uses, including significant shopping and public parks;
- Strengthening and diversifying the tax base to improve the long-term economic stability of the city.

The City has approximately $286 million in its 10-year Capital Improvement Program to construct the Potomac Yard Metrorail station.

Crystal City Metrorail Station Second Entrance

A second full entrance to the Crystal City Metrorail Station is planned for Crystal Drive to increase station capacity, improve intermodal connections and better serve Crystal City workers and residents. This project is finishing the conceptual engineering phase.

Metrorail Service in Alexandria

The Yellow Line is directly connected to the Alexandria Site through the Metrorail station at Eisenhower Avenue and the King Street-Old Town Metro Station which is approximately 0.75-miles north and provides an added connection to the Blue Line. The Yellow and Blue Lines provide connections to Fairfax County in the south and center city D.C. in the north. There are a number of planned projects currently in design for improved bus, bicycle and pedestrian access, and amenities at this station. The City has approximately **$18.3** million in projects to improve Metrorail stations, including King Street-Old Town Metrorail station, and Eisenhower Avenue Metrorail station, which are in the City's 10-year Capital Improvement Program.

At the Eisenhower Avenue Metro Station, the City has developed a public-private partnership to improve transit access and bus shelters and reconstruct the pedestrian plaza. Planned improvements at the King Street-Old Town Metro Station include new bus bays, improved lighting, wider sidewalks and landscaping. At the King Street-Old Town Station, an $18.4 million Virginia Railway Express project will construct a new pedestrian tunnel between the Metro station and the adjacent Amtrak-VRE station. This will provide a major improvement for commuter train service.

Extension or new service commitment:
Metrorail already provides service to this site.

Real Estate | Transportation | Commuter Train

F5. Commuter Train Service: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F5.a. Extension or new service commitment
F5.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure rail service to Site?
F5.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Commuter rail helps to connect residents living beyond the reach of Metrorail in Northern Virginia to jobs closer to the center of the region.

In Northern Virginia, commuter train service is provided by the Virginia Railway Express (VRE), which connects Manassas and Fredericksburg to Union Station via Alexandria and Arlington, as well as Amtrak, which is headquartered at Union Station in Washington, D.C.

VRE provides commuter rail service in Northern Virginia on its Fredericksburg and Manassas lines for over 19,000 passengers per day, providing 5 million trips in Northern Virginia in FY17.

32 daily commuter trains operate through Northern Virginia, connecting Fredericksburg and Manassas to Arlington, Alexandria, and to Washington D.C.'s Union Station, with plans to increase service with additional trains in development.

Both VRE rail lines provide peak period commuter service to/from Union Station in Washington, D.C. Both the Fredericksburg and Manassas lines also serve L'Enfant Plaza in Washington, D.C., Crystal City Metrorail Station in Arlington, and King Street Station in Alexandria, which are all transfer points from VRE to the Metrorail system. In October 2017, VRE recorded a system-wide on-time performance of 90%. In January 2018, VRE's on-time performance was 90.12% on its Fredericksburg Line and 90.18% on its Manassas Line. Customers can track VRE's daily on-time performance on its website at: https://www.vre.org/service/daily-performance/. More information on VRE is available through the following link, and a map of the system is included below.

VRE system details: https://www.vre.org/

The VRE Operations Board adopted the VRE System Plan in 2014. The plan provides a framework for VRE system investments and actions VRE should pursue through 2040 to best meet regional travel needs. The system investments and service expansion recommended in the System Plan will enable VRE to carry over 40,000 new weekday trips by 2040, more than double the 19,000 daily trips carried today.

The System Plan investments are grouped into three phases between now and 2040:

- **Phase 1, 2015-2020:** Recommends pursuing relatively low-cost investments in equipment, stations and yard storage to maximize the capacity and service currently allowed in VRE's current agreements with the CSX and NS railroads. These projects are included in VRE's FY15-20 Capital Improvement Program (CIP) and will expand system capacity to carry up to 25,000 riders per day.

- **Phase 2, 2021-2030:** Focuses on expanding VRE peak period service and introducing new services including reverse peak trains and more express trains. Major railroad investments to relieve the key capacity bottlenecks on the VRE system, including the Long Bridge crossing of the Potomac River, are identified in this phase to support the expanded VRE service. With increased Long Bridge corridor capacity, the full ridership potential of expanded service can be realized.

- **Phase 3, 2031-2040:** Contains capital projects to enable continued growth in VRE service and ridership, including completing the triple tracking of the CSX main line between Alexandria and Spotsylvania, as well as additional peak and mid-day service. The system investments included in the plan also create the opportunity for weekend service.

VRE System Plan 2040 Final Report:
https://www.vre.org/vre/assets/File/2040%20Sys%20Plan%20VRE%20finaltech%20memo%20combined.pdf

In addition to VRE, Amtrak service along its Northeast Corridor makes stops in Alexandria (VA), Union Station (D.C.) and New Carrollton (MD).

Amtrak passengers can transfer to the WMATA Metrorail system at all three of these Amtrak stations. Amtrak service is also available to/from the Northern Virginia communities of Burke Centre, Lorton, Manassas, Quantico, and Woodbridge. Lorton also hosts an Amtrak "Auto Train" station, where people can load their cars onto a train for transport to Florida. The Alexandria Station in Old Town serves as the largest Amtrak station in Northern Virginia, with over 40 Amtrak trains per day, and same-station transfers to both Metrorail and VRE. Within Northern Virginia, Amtrak trains effectively serve as both intercity transit and supplemental commuter rail service. The Amtrak lines also connect Charlottesville, Lynchburg, and Roanoke, VA, Atlanta, GA, New Orleans, LA, and multiple destinations in Florida to the south, Martinsburg, WV, Pittsburgh, PA, Cleveland, OH, and Chicago, IL to the west, and Baltimore, MD, Philadelphia, PA, New York City, NY and Boston, MA to the north, among others.

Amtrak service in Virginia. (source: Amtrak.com)

More information on Amtrak service in Virginia is available through the following link:
https://www.amtrak.com/virginia

The Virginia Department of Rail and Public Transportation (DRPT) is also studying the implementation of high speed passenger rail service between Washington, D.C. and Richmond, Virginia (DC2RVA).

DRPT is currently working on a Final Environmental Impact Statement, preliminary engineering and a service development plan for the project.

In Alexandria, VRE serves the Alexandria Union Station, which is within walking distance to the Site. The Carlyle Community Council operates a shuttle that connects the Alexandria Union Station and the King Street-Old Town Metrorail station to the Carlyle neighborhood which is directly adjacent to the proposed site area. It operates every 10 minutes during weekday peak periods. VRE is making improvements within Alexandria, including an $18.4 million project that will provide a pedestrian tunnel directly linking Alexandria Union Station and the King Street-Old Town Metrorail Station. The project will also improve accessibility and allow VRE and Amtrak passengers to access trains on all three tracks without crossing tracks at-grade. Construction is anticipated to begin in 2020.

Extension or new service commitment:
VRE already provides service to the Alexandria site.

Real Estate | Transportation | Ferry

F6. Ferry Service for employee commuting: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F6.a. Extension or new service commitment
F6.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure ferry service to Site?
F6.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

The Potomac River Boat Company operates a tourism-oriented ferry service that provides water transportation between Maryland (National Harbor), Alexandria (Old Town) and D.C. (The Wharf and Georgetown).

The company recently acquired four new ferries to carry 149 passengers each between the sites mentioned. In an attempt to provide more non-SOV travel options for people commuting to northern Virginia and D.C., the Northern Virginia Regional Commission (NVRC) has conducted studies of the viability of increasing ferry service along the Potomac River in the future.

Extension or new service commitment:
The Potomac River Boat Service already provides service to the Alexandria Site.

F7. Bus Service: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F7.a. New service or extension commitment
F7.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure bus service to Site, if necessary?
F7.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Northern Virginia is served by a dense network of integrated bus systems.

Over 200 bus routes serve Northern Virginia specifically. At the regional level, Metrobus, operated by the Washington Metropolitan Area Transit Authority (WMATA), connects many locations across Northern Virginia to Washington, D.C., and parts of Maryland, with 73 routes in Virginia alone. Many of Northern Virginia's cities and counties operate their own local bus systems as well, with DASH serving 11 routes in Alexandria, Arlington Transit (ART) serving 17 routes in Arlington County, Fairfax Connector serving 88 routes in Fairfax County, and Loudoun County Transit serving 35 routes in Loudoun County.

The region offers express bus service between key destinations (such as between Dulles Airport, Rosslyn, and downtown D.C.) and Bus Rapid Transit (BRT) with dedicated bus lanes connecting Arlington and Alexandria. Together, regional bus services provided nearly 40 million rider trips in northern Virginia in FY17 (July 2016 – June 2017).

Metrobus system-wide, on-time performance (meaning the percentage of customer journeys completed on time) was 78% during the calendar quarter that ended on December 31, 2017. During the same period, Metrobus customer satisfaction was 76%.

All public bus systems in Northern Virginia use regional SmarTrip fare media, which allows seamless transfers between bus systems and the Metrorail system.

WMATA Metrobus Map, including all regional providers (Virginia):
https://www.wmata.com/schedules/maps/upload/VA-System-Map-Web-version.pdf

- WMATA Metrobus – regional bus service: https://www.wmata.com/service/bus/

- Arlington Transit (ART) – local bus service: http://www.arlingtontransit.com/

- Alexandria (DASH) – local bus service: https://www.dashbus.com/welcome

- Fairfax (County) Connector – local bus service: http://www.fairfaxcounty.gov/connector/

- Fairfax (City) CUE – local bus service:
  http://www.fairfaxva.gov/government/public-works/transportation-division/cue-bus

- Loudoun (County) Transit – commuter bus service: https://www.loudoun.gov/bus

- PRTC - local (OmniLink) and commuter bus service (OmniRide):
  http://www.prtctransit.org/index.html

The Alexandria Site is served by regional (Metrobus) and local bus (DASH) service, and both bus providers serve two major transit centers within walking distance of the Carlyle neighborhood, including the King Street-Old Town Metrorail Station and the Eisenhower Avenue Metrorail Station.

Metrobus operates four routes that serve the Alexandria site, including:

- Routes 29K / 29N – King Street-Old Town Metro Station to Fairfax County (west)
- REX (Richmond Highway Express) – King St-Old Town and Eisenhower Ave Metro stations to Fairfax County (south) via Richmond Highway
- NH2 – King Street-Old Town and Eisenhower Ave Metro Stations to National Harbor (MD)

DASH is the local transit service operated by Alexandria Transit Company (ATC). DASH operates a total of 11 routes, six of which serve either King St-Old Town Metrorail Station or Eisenhower Avenue Metrorail Station. In addition, the following routes have bus stops on local streets within or near the proposed Site area:

- AT2 – Lincolnia to Braddock Rd Metro station, via King St-Old Town Metro station
- AT5 – Van Dorn Metro station / Landmark Mall to Braddock Rd Metro station, via King St-Old Town Metro Station
- AT6 – Northern Virginia Community College to King St-Old Town Metro Station
- AT7 – Landmark Mall to Lee Center / South Old Town, via Eisenhower Ave Metro Station and King Street Metro station
- AT8 – Van Dorn Metro Station to Braddock Rd Metro station, via King St-Old Town Metro station
- AT10 – King St-Old Town Metro station to Potomac Yard shopping center

Alexandria's Transit Development Plan, completed in 2016, recommends almost all DASH routes to improve their frequencies to 15-minute headways during peak periods. It also recommends a new weekday circulator route, known as the Eisenhower East circulator. This circulator would connect from the King St-Old Town Metrorail Station to the Eisenhower Ave Metrorail Station, connecting residential, office and commercial uses at 10-minute headways during peak periods and 15-minute headways during non-peak hours.

Bus and Metrorail service in the vicinity of the Alexandria site (source: WMATA).
Site noted by green star.

New service or extension commitment:
Two bus systems already serve the Alexandria site.

Real Estate | Transportation | Transit
F8. Master Transit Plan: please provide a copy of the Master Transit Plan encompassing Site, if any.

Alexandria adopted a complete Transportation Master Plan in 2008, and the Pedestrian and Bicycle Chapters were updated and approved in 2016.

The plan is currently undergoing updates for the rest of the chapters, which will highlight crucial technology upgrades that City will need to address to further the ongoing work toward becoming a Smart City. As part of this plan update, Alexandria is embarking on a Transit Vision Study in early 2018 that will identify existing bus transit needs in Alexandria, as well as future projected needs and untapped markets, and develop an unconstrained, and non-biased future bus transit network/alignment that responds to current and projected needs. Similar efforts have been conducted in cities such as Houston, Jacksonville, and San Jose, where plans were done to adapt the transit system to reality in terms of existing and future demographics and land use.

Transportation Master Plan (2008 to present):
https://www.alexandriava.gov/uploadedfiles/tes/info/tes_tmp_complete.pdf

Transportation Master Plan (updated Pedestrian and Bicycle Chapters):
https://www.alexandriava.gov/uploadedFiles/tes/info/2016-06-27_Ped%20and%20Bike%20Master%20Plan%20WEB2.pdf

Vision Zero Action Plan (2017):
https://www.alexandriava.gov/uploadedFiles/tes/info/Vision%20Zero%20Action%20Plan%20Final_12012017.pdf

Eisenhower East Small Area Plan (2003):
https://www.alexandriava.gov/uploadedFiles/planning/info/masterplan/City_Master_Plan_Map/EisenhowerEastSAPCurrent.pdf

Note: Proposed Alexandria Site is located within the Eisenhower East Small Area Plan boundaries.

Real Estate | Local Taxes | Real Property Tax Rate
G1.a. Calculate Annual Real Property Taxes for Site

The real property tax rate is $1.13 per $100 of assessed value.

At the tax rate above and current assessed values, real property taxes for the buildings under consideration for the first phase of occupancy are approximately $2.60 per square foot. Assuming assessed values will increase due to building improvements and occupancy, using a per square foot rate of $3.75, annual real property taxes for 500,000 occupied square feet in the first phase would be approximately $1,875,000. When Alexandria's proposed 30% real estate tax abatement (available for the first 15 years) is accounted for the annual tax bill would decrease to $1,312,500.

Real Estate | Local Taxes | Personal Property Tax Rate

G2.a. Detail any personal property exclusions

$4.75 per $100 of assessed value
The rate for machinery and tools is $4.50 per $100 of assessed value

The City assesses all business personal property, except computers, at 80% of the property's purchase cost in its first year of service. In each subsequent year of service, the assessed value declines by 10% until it reaches the minimum value of 20% of purchase cost in the seventh and later years of service. The City assesses computers at 65% of the property purchase cost in the first year of service, 45% the second year, 30% the third year, 20% the fourth year and 5% in the remaining years.

Real Estate | Local Taxes
G3. Detail any additional local taxes (i.e., overlay, infrastructure)

Business License Tax: $0.05 to $0.58 per $100 of assessed value depending on the type of business. Applicable to all persons (including corporations, partnerships and individuals) doing business in the City of Alexandria, or self-employed professionals on a part-time or full-time basis who have annual gross receipts in excess of $10,000, are required to pay an annual tax on gross receipts earned in the City.

Sales Tax: 1% on retail sales; this tax is in addition to the state's sales tax rates.

Meals Tax: 4% of the total amount charged for the meal, including alcoholic beverages.

In addition to taxes described above, the City also taxes cigarettes, hotel and motel rooms, utilities, and admissions.

Real Estate | Government

H1.a. Municipal government organization and responsibilities
H1.b. County government organization and responsibilities
H1.c. State government organization and responsibilities, especially as government action may affect the Company and the headquarters.

Alexandria is an independent city (Virginia cities have no county affiliation), which derives its governing authority from a charter granted by the Virginia General Assembly.

The present City Charter was granted in 1950; it was amended extensively in 1968, 1971, 1976, and 1982. Alexandria operates in the council-manager form of city government. This form of government centralizes legislative authority and responsibility in the elected City Council. Administrative authority and responsibility are held by the City Manager, who is appointed by the City Council. Since 1992, the City has maintained the highest grades (AAA) from both major bond rating agencies.

The City Council is composed of a Mayor and six Council members who are elected at-large for three-year terms. The Mayor, who is chosen on a separate ballot, presides over meetings of the Council and serves as the ceremonial head of government. The Mayor does not have the power to veto Council action. Council members traditionally choose the person receiving the most votes in the election to serve as Vice Mayor.

Council determines the needs to be addressed and the degree of service to be provided by the administrative branch of the City government. Examples of the powers granted to the Council under Alexandria's Charter include:

- Determine policy in the fields of planning, traffic, law and order, public works, finance, social services, and recreation; establish administrative departments, offices, and agencies;

- Appoint and remove the City Manager;

- Adopt the budget, levy taxes, collect revenues, and make appropriations; authorize the issuance of bonds by a bond ordinance;

- Appoint members of the Planning Commission, and other City authorities, boards, commissions, and committees; and

- Inquire into the conduct of any office, department, or agency of the City, and make investigations into municipal affairs and provide for an independent audit

The City Manager is appointed by City Council, and serves as the chief executive officer of the City. The manager provides expert guidance to the Council and is responsible for planning, organizing, directing, and coordinating all activities of City government. The manager prepares and submits the annual operating budget and capital improvement program and is responsible for their administration after adoption; prepares monthly and annual fiscal and activity reports; and appoints all City department heads and employees, except court and school personnel.

Individual cities are restricted by the State from borrowing money through bond issues in excess of 10% of the total assessed valuation of real estate subject to taxation. Bonded indebtedness in Alexandria has been incurred for major capital improvement projects such as schools, parks, flood control, public buildings, streets, and rapid transit. Debt service charges are included in the operating

budget. The City's AAA/Aaa credit rating and sound fiscal policies result in a favorable interest rate on the sale of its bonds. An independent audit is conducted annually as required by the City Charter. **The Virginia General Assembly is the state's legislative body.**

The General Assembly's lower house, the Virginia House of Delegates, consists of 100 members who are elected to two-year terms; its upper house, the Senate of Virginia, consists of 40 members with four-year terms. The Governor of the Commonwealth of Virginia is the state's chief executive, who serves a four-year term and cannot serve consecutive terms. The Governor oversees the state's executive agencies. Ralph Northam is the current Governor; he began his term in January 2018.

The Virginia Economic Development Partnership (VEDP) leads business recruitment, expansion assistance, and trade development activities at the state level, in close coordination with regional and local economic development efforts. VEDP is a quasi-independent state economic development authority governed by a 17-member board of directors that spans gubernatorial administrations. (The board of directors is comprised of Virginia businesspersons appointed by the Governor and the General Assembly.) This governance structure enables VEDP to function as a nonpartisan EDO with stable leadership, operating nimbly and creatively to encourage the expansion and diversification of the state's economy. The authority also administers many of the state's incentive programs.

In addition, Virginia has created the Major Employment and Investment Project Approval Commission (MEI Commission), vested with the authority to confidentially review and approve custom grant proposals for significant economic development projects during the site selection process. The MEI Commission is comprised of leaders from the General Assembly and executive agencies (e.g., the chairs of the House Appropriations Committee and Senate Finance Committee, as well as the Secretaries of Finance and Commerce and Trade). By considering proposed incentive packages in closed session, the MEI Commission can give prospects certainty about Virginia's incentive offering while avoiding premature public disclosure.

Real Estate | Government | Elected Officials

H2.a. County Executive(s)
H2.b. County Legislative Officers, Representatives
H2.c. Mayor or Chief Executive Officer
H2.d. Municipal Legislative Officers, Representatives

County Executive(s):
N/A.

County Legislative Officers, Representatives:
N/A.

Mayor or Chief Executive Officer:
Allison Silberberg, Mayor
Mark B. Jinks, City Manager

Municipal Legislative Officers, Representatives:
Justin Wilson, Vice Mayor

Councilmembers:
Willie F. Bailey Sr.
John T. Chapman
Timothy B. Lovain
Redella S. "Del" Pepper
Paul C. Smedberg.

Alexandria's other elected representatives include the Clerk of Circuit Court, Commonwealth's Attorney, Sheriff, and the Alexandria School Board. Descriptions of those offices include:

- The Clerk of the Circuit Court is elected for an eight-year term and serves as the chief administrative officer of court operations. The Clerk is responsible for managing and keeping records of court proceedings; collecting fines; recording and keeping land records and transfer of land ownership records such as deeds and mortgages; the custody of subdivision plats and land tract maps; the sale of marriage licenses; and administering oaths and keeping disclosure statements.

- The Commonwealth's Attorney is elected for a four-year term and is the state's attorney for the prosecution of local criminal offenses.

- The Sheriff is elected for a four-year term and is responsible for the protection of the lives and property of City residents. The Sheriff serves all warrants of arrest and summonses for witnesses and jurors, acts as bailiff at sessions of the Circuit and District Court, and supervises the City detention facility and its inmates.

- The Alexandria School Board is a nine-member elected body that adopts policy for the daily operation of schools and sees that school laws are properly explained, enforced, and observed.

11. Describe any unique talent in the immediate area or opportunities that may not be covered in the Talent section.

Young. Smart. Progressive.

There's no mystery why independent studies consistently rank the City of Alexandria as a top location for labor and talent. Niche placed Alexandria fourth as one of the Best Cities in the U.S. for Millennials. In Alexandria, 33% of the population is comprised of those ages 25 to 39. This is among the highest percentages of any city or county in the nation.

Alexandria is one of the most educated cities in the country. More than 63% of residents 25 years and older have a bachelor's degree or higher, a 5% increase over the last five years. Most of this growth can be attributed to the increase in residents with graduate or professional degrees—more than 34% have been conferred graduate or professional degrees.

The population isn't just young and highly educated. It's also diverse and inclusive. More than a quarter of the area's families speak a language other than English at home. Movoto highlighted Alexandria as a best town for LGBTQ families. Practices including non-discrimination laws, electing local LGBTQ leaders, and providing inclusive health benefits for City employees were contributors to the top rankings. The Human Rights Campaign Fund recently named Alexandria and neighbor Arlington two of 37 American "All-Star Cities" acclaimed for its high standard of inclusiveness and protections toward LGBTQ communities.

Capital View

What you want, when you want it

Can you imagine being at the center of the nation's capital with everything it has to offer in the way of access and influence...but without quite as much congestion, noise, and drama. Imagine having your finger on the global pulse while your feet remain grounded in community. That's how we feel about Rosslyn, which combines the best of the cosmopolitan — tallest building in the region, extensive transportation network, beaucoup amenities — with a community orientation to create a truly unique neighborhood. The Capital View site is also unique with its endless options, from move-in ready, Class A buildings boasting hands down the best views of our nation's capital, to additonal office space up and down the Rosslyn-Ballston corridor.
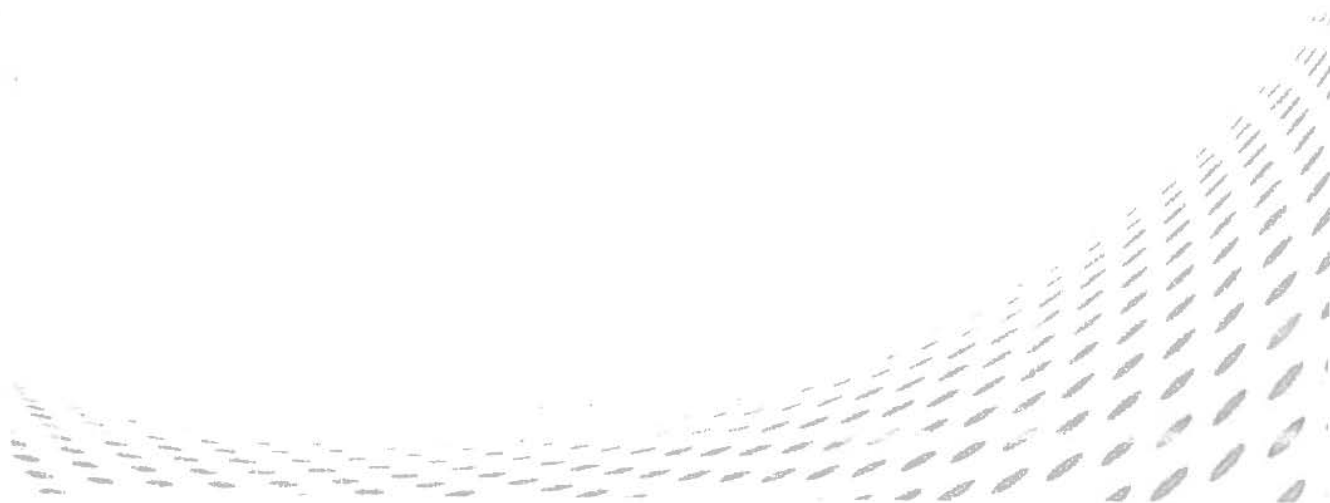
Real Estate | Site

A1. Site Name/Site Designation
A2. Street Address(es), including City, State/Commonwealth/Province and Zip/Postal Code, if available
A3. Location
A3.a. If Site is currently unincorporated, detail any plan(s) to annex Site to an incorporated municipality, as well as the benefits and burdens of any annexation. Name the intended municipality/municipalities to which Site would be annexed.
A3.b. County (Name), if applicable

The site, which includes 12 properties in Rosslyn, Virginia, is named "Capital View – Rosslyn HQ2"

All properties are in Arlington, Virginia, Zip Code 22209.

I. Phase I – 1 Million Square Feet
- 1812 North Moore St. ("1812 North Moore")
- 1201 Wilson Blvd./1200 Lynn St. ("Central Place")
- 1919 N. Lynn St. ("Waterview")
- 1777 N. Kent St. ("Rosslyn Plaza – North"). Please note that this property is part of the larger Rosslyn Plaza development, identified in Phase 2. This is an existing building that would be redeveloped in the final phase of development at Rosslyn Plaza.

II. Phases II and III – 4.3 Million Square Feet
- 1901/1911 North Fort Myer Dr. ("Rosslyn Gateway")
- 1401 Wilson Blvd./1400 Key Blvd. ("1401 Wilson")
- 19th St. North/Arlington Ridge Rd. ("Rosslyn Plaza"). This includes 1777 N. Kent St., or Rosslyn Plaza – North

III. Phase IV and Beyond – 2.8 Million Square Feet
- 1200 Wilson Blvd.
- 1701 North Fort Myer Dr.
- 1501/1515 Wilson Blvd.
- 1901 North Moore St.
- 1820 North Fort Myer Dr.

Real Estate | Description, Characterization

A4.a. Description – Briefly describe Site (shape, topo, etc.)

A4.b. Characterization – Indicate all that may apply:
- Brownfield
- Commercial, including Commercial Park
- Greenfield
- Industrial, including Industrial Park
- Suburban
- Technology, including Technology Park
- Urban

A4.c. Description – Briefly describe any geographic features that may limit or enhance the growth of Site (e.g., water or mountains)

The Capital View - Rosslyn HQ2 proposal includes 12 sites in downtown Rosslyn in close proximity to the Rosslyn Metro Station, the Potomac River, and the District of Columbia, including neighborhoods like Foggy Bottom and Georgetown.

Rosslyn is the urban core of Arlington County and is situated in one of the region's most strategic locations with convenient access to two international national airports and the heart of the District of Columbia. The Rosslyn Metro Station Area is comprised of 300 acres and includes all of greater Rosslyn. The core downtown area, referred to as the "Rosslyn Coordinated Redevelopment District," ("RCRD") is in easy walking distance of the Metro Station and totals 65 acres. All 12 sites in the Capital View – Rosslyn HQ2 proposal are located in the RCRD. Rosslyn's topography generally slopes down towards the Potomac River, which helps create unique views of the Potomac River and D.C., including the monument core, from each of the buildings in Rosslyn. See Exhibit 1, Map of Rosslyn, and Exhibit 2, Topographic Map.

Characterization:
☒ Urban

Real Estate | Size

A5.a. Immediate: Number of acres (either contiguous or within close enough proximity to foster a sense of place and pedestrian-friendliness) currently available for the Project's immediate operations

A5.b. Expansion: Number of acres (either contiguous or within close enough proximity to foster a sense of place and pedestrian-friendliness) available for the Project's future or expansion operation

A5.c. Schematic: Attach schematic drawing of Site.

A5.d. If less than 100 acres, is Site expandable to 100 acres?

A5.d.(i) Detail the plan and timetable for doing so.

Below are large blocks of vacant and available space in Capital View.

Should Amazon require more than 670,000 square feet in Q1 2019, the Capital View Development Team has two additional Class A options available. Significant portions of the fully renovated 1100 and 1500 Wilson Boulevard buildings are available—increasing the total large block availability to almost 950,000 square feet.

Capital View Large Blocks
As of March 5, 2018

Phase I	Contiguous SF
1812 North Moore Street	271,000
1777 North Kent Street	158,000
1201 Wilson Boulevard	124,000
1919 N Lynn Street	115,000
Total Contiguous Large Blocks	**668,000**

Additional Options	
1500 Wilson Boulevard	192,000
1100 Wilson Boulevard	86,000
Total Large Blocks	**946,000**

These properties are part of Phase I of the Capital View - Rosslyn HQ2 proposal, which includes 6.5 acres of property with 1,011,000 square feet of immediately available, recently constructed, Class A office gross floor area. "Phases II and III" include three properties totaling 10.79 acres and 4,336,000 square feet of office gross floor area that are entitled but not yet constructed. "Phase IV and Beyond" includes five properties totaling 5.91 acres with the potential to redevelop with up to 2,828,236 square feet of office gross floor area.

Commercially reasonable expansion is possible in Rosslyn.

The core downtown area of Rosslyn is comprised of 65 acres within easy walking distance of the Rosslyn Metro Station. That 65-acre area, which constitutes the RCRD, is planned for high density mixed-use development. The Rosslyn Metro Station Area is comprised of 300 acres. A number of properties not included in the Capital View - Rosslyn HQ2 proposal could be available for future expansion. See Exhibit 1, Map of Rosslyn.

See Exhibit 3, Package of Schematic Drawings.

This package includes schematic drawings of properties in Phases I, II, and III. Properties in Phase IV can be redeveloped for future expansion needs.

If less than 100 acres, is Site expandable to 100 acres?
☒ No

Detail the plan and timetable for doing so.
See response to A5b. Rosslyn is an urban area permitting high density, high-rise development. Beyond the over 8 million square feet available in the Capital View – Rosslyn HQ2 proposal, there is significant potential to expand to neighboring properties in Rosslyn, some of which are aging and suitable for redevelopment.

Real Estate | Improvements

A6.a. Are there any buildings or structures or other improvements on Site (or portion of Site)?
A6.b. If Yes, describe all buildings, structures and other improvements on Site (or portion of Site), including available square footages and sustainability efforts.

Are there any buildings or structures or other improvements on Site (or portion of Site)?
☒ Yes

I. Phase I – Approximately 1 Million Square Feet

Properties in Phase I include Class A office space ready for immediate use. The following is a description of each property:

- 1812 North Moore St. ("1812 North Moore"): Developed with a 30-story office building with approximately 569,739 square feet of office gross floor area and 11,020 square feet of ground floor retail gross floor area. Approximately 271,000 square feet of office gross floor area is available for immediate use. The building is certified LEED Platinum.

- 1201 Wilson Blvd./1200 Lynn St. ("Central Place"): Developed with a 31-story office building containing approximately 570,549 square feet of office gross floor area and 42,904 square feet of retail gross floor area. A second building includes 377 residential units. Approximately 258,000 square feet of office gross floor area is available for immediate use. Office uses are certified LEED Platinum and residential units are certified LEED Silver.

- 1919 N. Lynn St. ("Waterview"): Developed with a 24-story office building with approximately 623,176 square feet of office gross floor area and 7,510 square feet of retail gross floor area. Approximately 254,000 square feet of office gross floor area is available for immediate use. LEED Certification is required pursuant to the Site Plan's approval.

- 1777 N. Kent St. ("Rosslyn Plaza – North"): Developed with a 14-story office building with approximately 280,094 square feet of office gross floor area. Approximately 228,000 square feet of office gross floor area is available for immediate use.

II. Phases II and III – Approximately 4.3 Million Square Feet

Properties in Phases II and III are currently entitled for approximately 4.3 million square feet of development. Described below are the entitled improvements, including square footage and sustainability efforts:

- 1901/1911 North Fort Myer Dr. ("Rosslyn Gateway"): This property is subject to both a Phased Development Site Plan and a Final Site Plan (also known as a "site plan"). The Phased Development Site Plan permits a total of three buildings, including: (1) a 25-story, 498,774 square office building, (2) a 25-story, 316,616 square feet residential and hotel building, which includes 143,910 square feet of residential gross floor area and 133,952 square feet of hotel gross floor area, and (3) a 20-story, 136,223 square foot residential building with 7,687 square feet of ground floor retail. A total of 959,270 square feet of development is approved pursuant to the Phased Development Site Plan for a total approved 10.0 FAR.

- A Final Site Plan has been approved for three buildings, including (1) a 25-story office building with 490,056 gross floor area of office and 8,688 retail gross floor area, (2) a 25-story residential and hotel building with 133,952 gross floor area of hotel, 172,663 gross floor area of residential, and 10,001 gross floor area of retail and (3), the retention of an existing 12-story, 134,511 gross square foot office building.

- New office uses will be certified LEED Platinum. The entitled improvements have not yet been constructed, so up to 959,270 square feet of office gross floor area could be made available at this property by amending the Phased Development Site Plan and Final Site Plan approvals to convert the residential, hotel, and retail gross floor area to office use.

- 1401 Wilson Blvd./1400 Key Blvd. ("1401 Wilson"): This property is subject to a site plan which permits the construction of two towers over structured parking. A 29-story office tower is approved for 513,004 square feet of office use and 11,131 square feet of retail use, and an associated residential tower is approved for 347,596 square feet, or 302 dwelling units, of residential use and a 44,409 square foot grocery store. Office uses will be certified LEED Platinum. The entitled improvements have not yet been constructed, so up to a total of 916,140 square feet of office gross floor area could be available in this development by amending the site plan approval and converting the planned residential building and retail uses to office use.

- 19th St. North/Arlington Ridge Rd. ("Rosslyn Plaza"): This property is subject to a Phased Development Site Plan which permits a five-building development with up to 2,531,660 square feet of gross floor area, including 1,810,173 square feet of office gross floor area, 546,487 square feet of residential gross floor area, 130,000 square feet of hotel gross floor area, and 45,000 square feet of retail gross floor area. The office use can be LEED certified. Please note that this development includes 1777 N. Kent, or Rosslyn Plaza – North, in its final stage of construction. The entitled improvements have not yet been constructed, so up to 2,573,000 square feet of office gross floor area could be made available in this development by amending the Phased Development Site Plan approval to convert hotel and residential uses to office use, which would require County Board discretionary approval.

III. Phases IV and Beyond – Approximately 2.8 Million Square Feet

Properties in Phase IV can be redeveloped to accommodate future expansion needs. As set forth in response B1 (Planning and Zoning), these properties are eligible for rezoning to C-O-Rosslyn. As a codification of the Rosslyn Sector Plan, the C-O-Rosslyn District encourages high intensity, mixed-use development, including, with special exception site plan approval, retail, office, residential, and hotel at densities up to a 10.0 FAR, and typical heights ranging from 230 to 390 feet. For reference, current improvements on these properties are as follows:

- 1200 Wilson Blvd.: Developed with a 12-story office building consisting of approximately 148,461 square feet of office gross floor area, including dedicated conference facilities to support the office use.

- 1701 North Fort Myer Dr.: Developed with a 13-story office building consisting of approximately 274,119 square feet of office GFA, and 3,129 square feet of retail GFA.

- 1501/1515 Wilson Blvd.: Developed with two buildings, including a 13-story office building with approximately 108,836 square feet of office gross floor area, and 18,233 square feet of retail gross floor area, and a second 13-story building containing 126,685 square feet of office gross floor area, and 12,615 square feet of commercial gross floor area.

- 1901 North Moore St.: Developed with a 13-story office building with 104,949 square feet of office gross floor area and 45,967 square feet of retail gross floor area.

- 1820 North Fort Myer Dr.: Developed with a 12-story office building and an immediately adjacent four-story structure, including the Arlington United Methodist Church and a gas station at street level.

Real Estate | Improvements

A7. Easements, Licenses, Rights of Way: describe each of the easements, licenses and rights of way affecting Site, and identify the beneficiaries, holders or owners of the same. If easier to show on a map, please attach to submittal and label.

Please See Exhibit 4, Package of Certified Survey Plats.

Real Estate | Improvements

A8. Ownership: describe the ownership of Site, including the ownership structure and any entitlements.

Ownership and entitlements for each property included in Capital View – Rosslyn HQ2 are as follows:

I. Phase I

- 1812 North Moore St. ("1812 North Moore"): Owned by "1812 Holdings LLC" c/o Monday Properties, LLC. This property is subject to Site Plan #18 which permits a 30-story office building with 569,739 square feet of office gross floor area and 11,020 square feet of ground floor retail gross floor area. The entitled improvements have been constructed.

- 1201 Wilson Blvd./1200 Lynn St. ("Central Place"): Owned by "1730 North Lynn Street RLLLP," c/o The JBG Companies. This property is subject to Site Plan #335, which permits a 31-story office building with 570,549 square feet of office gross floor area and 42,904 square feet of retail gross floor area. A separate building, associated by site plan approval, contains 377 residential units. The entitled improvements have been constructed.

- 1919 N. Lynn St. ("Waterview"): Owned by "PPF OFF 1919 N Lynn Street LLC" c/o Morgan Stanley Real Estate. This property is subject to Site Plan #25, which permits a 24-story building with 623,176 square feet of office gross floor area and 7,510 square feet of retail gross floor area. The entitled improvements have been constructed.

- 1777 N. Kent St. ("Rosslyn Plaza – North"): Owned by "Geneva Associates Owner LLC" and "Paris Assoc LP," c/o C. E. Smith Co. and c/o Gould General Partners. This property is subject to Site Plan #137, which permits a 14-story building with 280,094 square feet of office gross floor area. The entitled improvements have been constructed.

II. Phases II and III

- 1901/1911 North Fort Myer Dr. ("Rosslyn Gateway"): Owned by "JBG/Rosslyn Gateway South LLC" c/o JBG Companies. This property is subject to both Phased Development Site Plan #419 and Final Site Plan #419 (also known as a "site plan"). The Phased Development Site Plan permits a total of buildings, including; (1) a 25-story, 498,774-square-foot office building; (2) a 25-story, 316,616-square-foot residential and hotel building, which includes 143,910 square feet of residential gross floor area and 133,952 square feet of hotel gross floor area; and, (3) a 20-story, 136,223-square-foot residential building with 7,687 square feet of ground floor retail. In total, 959,270 square feet of development is approved pursuant to the PDSP for a total approved 10.0 FAR.

- Final Site Plan #419 has been approved for three buildings, including (1) a 25-story office building with 490,056 gross floor area of office and 8,688 retail gross floor area, (2) a 25-story residential and hotel building with 133,952 gross floor area of hotel, 172,663 gross floor area of residential, and 10,001 gross floor area of retail and (3), the retention of an existing 12-story, 134,511-gross-square-foot office building.

- 1401 Wilson Blvd./1400 Key Blvd. ("1401 Wilson"): Owned by "Oak Hills Property Assoc. LLC" and "Nash Street Property Assoc. LLC" c/o Monday Properties LLC. This property is subject to the approval of Site Plan #429, which permitted the construction of two towers over structured parking. The 29-story office tower is approved for 513,004 square feet of office use and 11,131 square feet of retail use. The associated residential tower is approved for 347,596 square feet (302 units) of residential use and 44,409 square feet of retail use (grocery store).

- 19th St. North/Arlington Ridge Rd. ("Rosslyn Plaza"): Owned by "Geneva Associates Owner LLC." c/o C. E. Smith Co. and c/o Gould General Partners. This property is subject to Phased Development Site Plan #422, which permits a five-building development with up to 2,531,660 square feet of gross floor area, including 1,810,173 square feet of office gross floor area, 546,487 square feet of residential gross floor area, 130,000 square feet of hotel gross floor area, and 45,000 square feet of retail gross floor area. Please note that this development includes 1777 N. Kent St., or Rosslyn Plaza – North, in its final stage of construction.

III. Phases IV and Beyond

Properties in Phase IV can be redeveloped to accommodate future expansion needs. As set forth in response B1 (Planning and Zoning), these properties are eligible for rezoning to C-O-Rosslyn. As set forth in the Rosslyn Sector Plan, the C-O-Rosslyn District encourages high intensity, mixed-use development including, with special exception site plan approval, retail, office, residential, and hotel at densities up to a 10 FAR and typical heights ranging from 230 to 390 feet. Ownership and current entitlements are described below, all of which have been constructed:

- 1200 Wilson Blvd.: Owned by "1200 Property Associates LLC" c/o Monday Properties LLC. This property is subject to Site Plan #23, which permits a 12-story office building consisting of approximately 148,461 square feet of office gross floor area, including dedicated conference facilities to support the office use.

- 1701 North Fort Myer Dr.: Owned by "Berkley Property Associates LLC" c/o Monday Properties LLC. This property is subject to Site Plan #59, which permits a 13-story office building consisting of approximately 274,119 square feet of office GFA, and 3,129 square feet of retail GFA.

- 1501/1515 Wilson Blvd.: Owned by "Art Property Associates LLC" c/o Monday Properties LLC. 1501 Wilson Blvd. is subject to Site Plan #34, which permits a 13-story office building consisting of approximately 125,000 square feet of commercial use, including ground floor retail. 1515 Wilson Blvd. is subject to Site Plan #67, which permits a building containing 123,500 square feet of commercial gross floor area.

- 1901 North Moore St.: Owned by "Rosslyn Building East LTD PTNRSP" c/o Weissberg Corporation. This property is subject to Site Plan #66, which permits a 13-story office building with 104,949 square feet of office gross floor area and 45,967 square feet of retail gross floor area.

- 1820 North Fort Myer Dr.: Owned by the Ames Center L.C., c/o Va. MGMT, Inc. This property is subject to Site Plan #1, which permits both a 12-story office building and the immediately adjacent four-story structure, including the Arlington United Methodist Church and a gas station at street level.

Real Estate | Improvements | Acquisition Costs

A9. Please describe if all or a portion of Site will be made available at no cost, or a reduced cost to the Project.
A9.a.(I). Will a government agency make Site available to the Project at no cost?
A9.a.(i). Will a government agency make Site available to the Project at no cost?
A9.a.(ii). If No, specify the per acre (and total) cost of Site to the Project?
A9.b.(i). Will a nonprofit entity make Site available to the Project at no cost?
A9.b.(ii). If No, specify the per acre (and total) cost of Site to the Project.
A9.c.(i). Will individuals or corporations or other entities make Site available to the Project at no cost?
A9.c.(ii). If No, specify the per acre (and total) cost of Site to the Project?

Will a government agency make Site available to the Project at no cost?
☒ No

If No, specify the per acre (and total) cost of Site to the Project.
Not applicable

Will a nonprofit entity make Site available to the Project at no cost?
☒ No

If No, specify the per acre (and total) cost of Site to the Project.
Not applicable

Will individuals or corporations or other entities make Site available to the Project at no cost?
☒ No

The owners/developers of Capital View are not currently offering any land for sale.

Real Estate | Improvements
A10. Parking: identify all current and future parking options for Site
A10.a. Existing and Planned Retail Development near Site
A10.a.(i). Restaurants
A10.a.(ii). Cinemas
A10.a.(iii). Shopping
A10.a.(iv). Other Public Gathering Spaces (such as coffee shops and local breweries)

Phase I – Available Parking
- 1812 North Moore St. ("1812 North Moore"): A total of 480 spaces are approved for this property, with 230 parking spaces currently available for use.

- 1201 Wilson Blvd./1200 Lynn St. ("Central Place"): A total of 821 spaces are approved for this property, with 487 parking spaces currently available for use.

- 1919 N. Lynn St. ("Waterview"): A total of 623 spaces are approved for this property, with 254 parking spaces currently available for use.

- 1777 N. Kent St. ("Rosslyn Plaza – North"): A total of 284 spaces are approved for this property, with 200 parking spaces currently available for use.

Phases II and III – Approved Parking
- 1901/1911 North Fort Myer Drive ("Rosslyn Gateway"): The approved Phased Development Site Plan for this property includes 875 parking spaces. Final Site Plan approval has been granted for 717 parking spaces.

- 1401 Wilson Blvd./1400 Key Blvd. ("1401 Wilson"): The most recent Site Plan approval includes a phased garage with 787 total parking spaces and a single garage with 816 total parking spaces.

- 19th St. North/Arlington Ridge Rd. ("Rosslyn Plaza"): The approved Phased Development Site Plan for this property includes 2,168 parking spaces.

Phase IV and Beyond
- These properties are older buildings which could be redeveloped with new mixed-use buildings of office, apartment, hotel, or a combination thereof. Parking for newly constructed buildings would depend on the desired parking ratio. C-O-Rosslyn has historically required office parking between one space per 1,000-1,200 square feet of office gross floor area, but the Arlington County Board can modify this requirement.

The Capital View neighborhood of Rosslyn is home to nearly 30 sit-down restaurants and dozens of fast-casual locations, including the famous Ben's Chili Bowl.

If you can't find what you're looking for within a few blocks, the world-class fine dining and shopping of Georgetown's M-Street corridor and waterfront is just a 10-minute stroll across the Key Bridge and the Potomac River.

Amazon employees will be one metro stop away (or a 0.8-mile walk) from the **AMC Courthouse Plaza 8 movie theater** in the Courthouse neighborhood, which has been upgraded with recliners. On Fridays in the summer, the Rosslyn Business Improvement District (BID) hosts its **summer movie series in Gateway Park**, accompanied by pop-up wine and beer vendors. A short trip across the bridge is **AMC Loews Georgetown movie theater**.

Rosslyn is home to over 400,000 square feet of existing and proposed retail space, including dozens of well-known retailers like Target and Pier 1.

Just down the Rosslyn-Ballston corridor, the Clarendon neighborhood offers Market Common, home to an Apple Store, Loft, Pottery Barn, Crate and Barrel, and Whole Foods Market. Just a few minutes' walk across the river into Georgetown, Amazon employees can stroll the M Street corridor and its 450+ shopping, dining, and entertainment options that make it one of the best shopping streets in the nation.

With ample green space and works of public art, Rosslyn is a great place for a stroll.

The three acre Gateway Park hosts numerous events throughout the year, including the Rosslyn Cinema movie festival in the summer and Rosslyn Jazz Festival each September. The Continental Beer Garden in the heart of Rosslyn has a hip, casual vibe where friends and family settle in for after-work apps and beers. The Heavy Seas Alehouse serves up the best of the Baltimore brewery's craft beers along with a side of fine dining and service of a casual alehouse. Rosslyn is also home to many cutting-edge fitness and wellness centers, including Lavabarre, Orangetheory Fitness, and Gold's Gym. Caffeination options are plentiful from national chains such as Starbucks to local businesses like Central Coffee.

Real Estate | Improvements | Affordable Housing
A11. Affordable Housing: identify available affordable housing options within close proximity to Site

In terms of existing affordable housing for Amazon employees (making at least $100,000/year), there are a multitude of options within a five-minute walk of Capital View, including historic garden apartments, soaring high-rise condos with spectacular views, stately townhomes, and single-family homes perfect for those who need a little more space.

There are more than 16,500 units within less than one square mile of Capital View, with plans underway to add nearly 5,400 more units in the next 20 years. Expand that to a two-mile radius, and the opportunities grow further with an additional 39,000 housing units in Arlington's urban suburbs as well as Georgetown in the District.

Please see the following neighborhood profiles for more information on locations with convenient commutes to the Capital View site: Rosslyn, Georgetown, Bethesda, and Capitol Hill.

Affordable housing for the broader community is a long-standing priority for Arlington County.

There are approximately 749 existing or approved but unbuilt, committed, affordable units in Rosslyn. An additional approximately 800 existing market rate affordable units, defined as affordable up to 80% area median income, are located in Rosslyn. The Rosslyn Sector Plan (as referenced in B1) supports the expansion of affordable and workforce housing in Rosslyn. The Rosslyn Sector Plan calls for up to 30% of the value of community benefits contributed by Rosslyn site plan projects to be directed to affordable housing, with a priority on cash contributions for additional units in the Rosslyn Metro Station Area, given the high cost of land in the downtown area. Also, in 2017, the Arlington County Board established the Housing Conservation District to protect the current stock of market rate affordable housing. Six of the 12 areas that make up the Housing Conservation District are within two miles of Rosslyn, including one directly adjacent to the Rosslyn Metro Station Area. The following sections describe Arlington County's policies and programs related to affordable housing and provide additional detail regarding affordable units close to the Capital View site.

The Affordable Housing Master Plan established policies to encourage and incentivize the production of moderately priced housing that would be affordable to households with incomes under 120% AMI.

Fortunately, this type of housing is still more readily available in the market than other County housing priorities; in 2017, 43% of homes sold in the County were affordable to this income segment.

Arlington has an inventory of 7,729 committed affordable units (CAFs). These units are guaranteed by agreement with federal, state, or County government, or through mechanisms such as tax-exempt financing, to remain affordable to low- and moderate- income households for a specified period of time—generally, 30 to 60 years. Rents in most cases are affordable to households earning 60% or less of the area median income, although some CAFs have rents affordable to households earning up to 80% AMI.

Some recent affordable housing development highlights include:
- The Berkeley: Phase I of the redevelopment of AHC's The Berkeley will replace 70 existing affordable units with a new modern building with 125 CAFs along Four Mile Run.

- Fisher House II: The acquisition of 68 at-risk apartments, known as Fisher House II, in Westover by APAH will help guarantee long term affordability in a neighborhood that has been under increasing redevelopment pressure.

- Culpepper Garden: Reinvesting in 210 units in Culpepper Garden, Arlington's first senior affordable development, built in 1975, will provide needed improvements so that this important resource can continue serving the needs of the community for another 60 years.

- Carver Homes: Six affordable homeownership units were sold to families with incomes up to 60% AMI as part of the Carver Homes project.

- Ballston Station: The redevelopment of Ballston Station/Central United Methodist Church will incorporate a new church, housing, and on-site childcare. The housing component of the project will be mixed income, with 119 rental units, including 48 CAFs.

- The Trove: A new infill apartment building, the Trove, will be built on the surface parking lot of the Wellington, making it the first major rental project under the Columbia Pike Neighborhoods Area Form Based Code. In fulfillment of the affordable housing provisions in the form based code, 105 units in the Wellington will be preserved as CAFs.

Affordable Housing in Rosslyn (22209)

Existing Committed Affordable Rental Units (CAFs)	CAF Units	Total Number of Units
Bennet Park	14	224
Courthouse Crossing	112	112
1800 Oak	38	314
Key Boulevard Apartments	41	41
Marbella Apartments	134	134
The Odyssey	21	306
Parc Rosslyn	101	232
Union on Queen	76	193
Queen's Court	39	39
Sedona	55	479
Subtotal	**631**	**2074**

Existing Market Affordable Rental Units	Affordable up to 60% AMI	Affordable between 60% and 80% AMI
Arlington Boulevard Apartments		15
Barbee House		42
Carter House		23
Carydale in Towne		17
Heather Gardens Apartments		13
Lauren Towers Apartments		51
London Normandy House		11
Nalbert Apartments		20
Park Georgetown		28
Radnor Manor		13
Rhodes Street		6
Robin Towers		62
Scott Street Apartments		10
Swansen Apartments		80
The Crestmont		63
The Nicole		16
Whispering Oaks Apartments		48
1310 Meade St		12
1301 Fort Myer Dr		14
Rahill Apartments	110	
Subtotal	**110**	**544**

Existing Affordable Homeownership	Affordable at 60% AMI	Affordable at 80% AMI
Key and Nash Affordable Dwelling Units	0	4
Subtotal	**0**	**4**

Real Estate | Improvements | Greenspace
A12. Greenspace Features: are there greenspace features that enhance Site (e.g., parks, jogging trails, etc.)

A unique feature in an urban environment, nearly 20% of Rosslyn is composed of green space, ranging from a 90-acre National Park site to a tiny 60-foot parklet.

Working in Rosslyn is a dream come true for cyclists, runners, and those who love being outdoors; cyclists and pedestrians alike can utilize more than seven miles of existing and planned pathways to get in and out of Rosslyn via 25 miles of dedicated scenic bike trails separated from traffic.

Rosslyn features significant public and private open space and is located in close proximity to significant federal parkland. Located inside the Rosslyn Coordinated Redevelopment District are Gateway Park, Freedom Park, Waterview Terrace, and Dark Star Park. Just outside the Rosslyn Metro Station Area ("RMSA") are several signature federal parks with convenient pedestrian access along the Potomac River, such as the Potomac Heritage Trail and Mount Vernon Trail. The area just outside of the RMSA also features Theodore Roosevelt Island, located on the Potomac River between Rosslyn and D.C., as well as the Pentagon 9/11 Memorial, the Marine Corps War Memorial, and Arlington National Cemetery. Significant regional attractions, including D.C.'s monument core, the Smithsonian museums, the National Mall, the Georgetown Waterfront, the Kennedy Center, the Potomac Gorge, and the George Washington Memorial Parkway are also a short distance away. See Exhibit 5, Open Space and Park Map.

Future planning for open space in Rosslyn includes new, direct connections to existing regional open spaces; the "18th Street Corridor," a pedestrian street and series of plazas running through the heart of Rosslyn to Rosslyn Plaza and the Potomac River; enhancements to existing parks, including a new master plan for Gateway Park; and improvements to the Potomac Riverfront, including pedestrian access from Rosslyn Plaza and a boathouse facility adjacent to the Key Bridge.

Real Estate | Improvements | Plat(s)
A13. Plat(s): attach plat(s) of Site and label according to section.

Please See Exhibit 4, Package of Certified Survey Plats.

Real Estate | Planning/Zoning | Designations
B1. Designation(s): identify Site's current planning/zoning designations(s)

Arlington County's General Land Use Plan, which serves as the comprehensive plan for the County, identifies the Capital View - Rosslyn HQ2 properties as located within the Rosslyn Coordinated Redevelopment District ("RCRD").

Properties located within the RCRD are governed by the Rosslyn Sector Plan, which is a small area plan, providing detailed redevelopment guidance for individual properties and Rosslyn at large. The Rosslyn Sector Plan was updated in 2015 to refine and update the redevelopment goals for the area, including ensuring variations in building heights, preservation of view corridors, and comprehensive planning to improve parks, as well as pedestrian and vehicular circulation.

Properties located in the RCRD are eligible for a rezoning to the C-O-Rosslyn District. All of the Capital View – Rosslyn HQ2 properties are located in the RCRD area and thus eligible for C-O-Rosslyn zoning. As set forth in the Rosslyn Sector Plan, the C-O-Rosslyn District encourages high intensity, mixed-use development including, with special exception, site plan approval, retail, office, residential, and hotel at densities up to a 10 FAR and typical heights ranging from 230 to 390 feet. See Exhibit 6, a copy of the C-O-Rosslyn District section of the Zoning Ordinance.

Properties in Phases I, II, and III are currently zoned C-O-Rosslyn and are entitled with Phase Development Site Plans and/or Final Site Plans. For those not built, construction will require acquiring building and related permits as outlined in D2 below. For sites that are built, all that will be required in order to occupy the buildings are new Certificates of Occupancy.

Properties in Phase IV, and those that may be targeted for future expansion, are currently zoned C-O, with site plan approval for the improvements currently on the sites. The C-O District permits densities up to a 3.8 FAR for office, retail, and hotel and a 4.8 FAR for residential. Again, the properties in this Phase are eligible for a rezoning to the C-O-Rosslyn District, in accordance with the Rosslyn Sector Plan, as discussed above.

See Exhibit 7, Zoning Map, and Exhibit 8, General Land Use Plan Map. In addition, the following link contains the 2015 Rosslyn Sector Plan:
https://projects.arlingtonva.us/wpcontent/uploads/sites/31/2015/07/Final-draft-Rosslyn_Sector_Plan-Posted_07-17-2015.pdf

Real Estate | Planning/Zoning | FAR
B2. Floor Area Ratio (FAR): identify Site's current FAR

I. Phase I
- 1812 North Moore St. ("1812 North Moore"): This property is approved for a 10.0 FAR.
- 1201 Wilson Blvd./1200 Lynn St. ("Central Place"): This property is approved for a 10.0 FAR.
- 1919 N. Lynn St. ("Waterview"): This property is approved for a 9.9 FAR.
- 1777 N. Kent St. (Rosslyn Plaza – North"): This property is approved for a 3.71 FAR.

II. Phases II and III
- 1901/1911 North Fort Myer Dr. ("Rosslyn Gateway"): This property has Phased Development Site Plan approval for a 10.0 FAR and Final Site Plan (also known as a "site plan") approval for a 9.9 FAR.
- 1401 Wilson Blvd./1400 Key Blvd. ("1401 Wilson"): This property is approved for a 10.0 FAR.
- 19th St. North/Arlington Ridge Rd. ("Rosslyn Plaza"): This property has Phased Development Site Plan approval for a 10.0 FAR.

III. Phases IV and Beyond
Properties in Phase IV can be redeveloped to accommodate future expansion needs. As set forth in response B1 (Planning and Zoning), these properties are eligible for rezoning to C-O-Rosslyn. As a codification of the Rosslyn Sector Plan, the C-O-Rosslyn District permits mixed use development at densities up to a 10 FAR and typical heights ranging from 230 to 390 feet.

- 1200 Wilson Blvd.: This property is approved for a 3.57 FAR. With a rezoning to C-O-Rosslyn, it has the potential to develop up to a 10.0 FAR.
- 1701 North Fort Myer Dr.: This property is approved for a 4.45 FAR. With a rezoning to C-O-Rosslyn, it has the potential to develop up to a 10.0 FAR.
- 1501/1515 Wilson Blvd.: This property is approved for a 4.18 FAR at 1501 Wilson and a 3.73 FAR at 1515 Wilson. With a rezoning to C-O-Rosslyn, it has the potential to develop up to a 10.0 FAR.
- 1901 North Moore St.: This property is approved for a 5.01 FAR. With a rezoning to C-O-Rosslyn, it has the potential to develop up to a 10.0 FAR.
- 1820 North Fort Myer Dr.: This property is approved for a 3.27 FAR. With a rezoning to C-O-Rosslyn, it has the potential to develop up to a 10.0 FAR.

Real Estate | Planning/Zoning | Permitted Uses
B3. Permitted Use(s): briefly describe Site's current permitted use(s)

Properties in Phases I, II, and III are zoned C-O-Rosslyn, which permits mixed-use development of office, retail, commercial, hotel, and multi-family dwellings. Generally, the Arlington County Board has the authority to modify permitted uses by special exception site plan approval. The C-O zoning district permits similar uses.

Real Estate | Planning/Zoning | Rezoning

B4. Rezoning: must Site be rezoned for the Project's expected use?
B4.a. If Yes, outline rezoning process, including all government approvals, public hearings, and schedule. Please describe any opportunity to fast track.
B4.b. If Yes, will governments commit to rezoning prior to Site selection?

4. Rezoning: must Site be rezoned for the Project's expected use?
☒ Yes

Properties in Phase IV that would be redeveloped would require a rezoning to C-O-Rosslyn and a special exception site plan, both of which require approval from the Arlington County Board. Both applications would be considered concurrently.

The process would take approximately one year from the acceptance of the applications to final approval by the County Board. The applications are reviewed by various sub-committees of the Planning Commission and similar public commissions, including the Site Plan Review Committee, Parks and Recreation Commission, Historic Affairs and Landmarks Review Board, Housing Commission, and Transportation Commission. These meetings are open to the public. The applications are then heard in a public hearing before the Planning Commission, which makes recommendations to the County Board. The County Board holds a public hearing and votes on approval of the applications. There is a 30-day appeal period running from the date of the County Board's approval of the applications.

Arlington County continues to explore ways to improve upon and increase the efficiency and effectiveness of its development review processes on a regular basis.

Should the Capital View site be a final contender for HQ2, the details of this proposal would be discussed at the highest levels of government to provide a more definitive response.

Real Estate | Planning/Zoning | Neighboring Properties
B5.a. Designation(s): identify current planning/zoning designation(s) for Neighboring Properties.
B5.b. Permitted Use(s): briefly describe Neighboring Properties' permitted use(s).

See response to B1. Neighboring properties are zoned C-O-Rosslyn, C-O, RA-4.8, RA-H-3.2, RA6-15, C-O-2.5, and S-3A.

Permitted Use(s):
See response to B3. Neighboring properties are zoned C-O-Rosslyn, C-O, RA-4.8, RA-H-3.2, RA6-15, C-O-2.5, and S-3A. The Rosslyn downtown area is predominantly zoned C-O and C-O-Rosslyn, which generally permit mixed-use development, including office, retail, hotel, or multi-family dwelling uses. Some neighboring properties are zoned RA-4.8, which permits high-rise residential development, and RA-H-3.2, which permits multiple family and hotel uses in high-rise development. RA6-15 permits residential uses at medium densities. The C-O-2.5 district permits multiple family, office, retail, and hotel uses in mid-to-high-rise development. The S-3A district includes neighboring open space and parkland as well as roadways. See Exhibit 7, Zoning Map.

Real Estate | Environment

C1. Site and Improvements (if any)
C1.a. Prior Use(s): detail prior use(s) of Site (or portion of Site) in reverse chronological order.
C1.b.(i). Detail each environmental event occurring on Site (or portion of Site) in reverse chronological order.
(Environmental events include – but are not limited to – any contamination, dumping, explosion, fire, landfill or spill of any kind or description)
C1.b.(ii). Describe any environmental cleanup or remediation occurring on Site (or portion of Site) as a result of an environmental event or otherwise in reverse chronological order. Please also include any environmental studies as supplemental information.
C1.c.(i). Detail each environmental study undertaken on Site (or portion of Site) in reverse chronological order.
C1.c.(ii). Provide copies of environmental studies performed on the site within the prior three years.

Today, Rosslyn's office marketplace is evolving, with an increasingly diverse mix of tenants, including more corporate entities and members of an innovative economy.

Rosslyn is Arlington County's "downtown," developed and planned for a range of uses which create a 24-hour, fully-activated urban neighborhood. Development in Rosslyn is distinguished by world-class architecture and high quality construction. Due in large part to its attractive location and access, Rosslyn has become an international destination for tourists and visitors, serving as a primary access point for prominent federal parks and national landmarks.

Prior to the present day, Rosslyn's uses included mixed-use commercial development, primarily consisting of office and hotel uses dating back to the 1970s, which followed the arrival of Metro's Blue Line in 1977 and Orange Line in 1978. Prior to this period of redevelopment, Rosslyn was developed with lower density commercial and industrial uses, including used car lots, lumber yards, and less desirable retail uses like pawn shops.

Environmental questions are harder to answer when multiple stakeholders are involved.

As Capital View is an urban location and in order to maintain confidentiality, the various owners would be happy to make each building's Phase I Environmental Site Assessment report available directly to Amazon if requested.

Real Estate | Environment | Neighboring Properties

C2.a. Prior Use(s): detail prior use(s) of Neighboring Properties in reverse chronological order. Please include any environmental events. Please also include any environmental studies as supplemental information.

See the response to C1.a.

Real Estate | Environment | Topography

C3.a. Elevation: identify Site's minimum and maximum topographic elevation. Please provide a topographic survey of Site, if available.

C3.b. Terrain: describe Site's terrain and Neighboring Properties' terrain:

C3.c. Wetlands: describe bodies of water, creeks, ditches, lakes, ponds, rivers and wetlands, and identify governing body or regulatory agency for each for Site and Neighboring Properties.

Rosslyn is an urban environment bordered by the Potomac River and the George Washington Memorial Parkway to the north and the east, federal parkland to the south and low, mid, and high rise mixed-use development to the west. Its topography slopes down from west to east as it approaches the Potomac River. See Exhibit 2, Topographic Map.

Real Estate | Environment | Soils types for Site and Neighboring Properties
C4.a. Testing: describe any geotechnical or other testing that has been or will be completed on Site (or portion of Site)

Not applicable.

Real Estate | Environment | Studies Permit(s)

C5.a. Specify all required environmental impact assessments and other environmental studies, and name relevant regulatory agency or agencies.

C5.b. Specify all required environmental permits, and name each government issuer of same. Can the environmental and building permits be integrated? Include a timetable for approvals.

Arlington County does not have any environmental impact assessments and other environmental studies that would be required for the project.

The County does not require Environmental Impact Statements (EISs) or similar studies as a matter of course.

Environmental Permits Issued by Arlington County:

- Land Disturbing Activity (LDA) Permit: https://building.arlingtonva.us/land-disturbing-activity-permit/
  This is the 'blanket' permit covering:
  - Arlington County Code: Erosion and Sediment Control
    - http://topics.arlingtonva.us/permits-licenses/land-disturbing-activity-permit/
  - Arlington County Code: Stormwater Management
    - https://building.arlingtonva.us/stormwater-management-ordinance/
  - Arlington County Code: Chesapeake Bay Preservation Ordinance
    - http://topics.arlingtonva.us/building/chesapeake-bay-preservation-ordinance/
  - Floodplain Management Ordinance applies in floodplains:
    https://environment.arlingtonva.us/flood-insurance-rate-maps/

- This guidance manual explains the LDA permitting process and requirements:
  https://arlingtonva.s3.dualstack.us-east-1.amazonaws.com/wp-content/uploads/sites/38/2016/09/DES-Stormwater-Management-Ordinance-Guidance-Manual.pdf

The required state permit for stormwater management is issued through ACG and is an integrated part of the LDA permit process.

Information for reference here:
http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx

Environmental Permits Issued by Commonwealth of Virginia or Federal Government: (See above for stormwater management.)

- Virginia DEQ manages program for soil/groundwater contamination and remediation: See http://www.deq.virginia.gov/Programs/LandProtectionRevitalization.aspx
- For sites with contamination that may require de-watering during construction:
  - Discharges to the storm drain system are permitted by Virginia DEQ: http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeEliminati on.aspx
  - Recently amended: http://townhall.virginia.gov/L/ViewAction.cfm?actionid=4548
  - Discharges to the sanitary sewer system are permitted by ACG: https://water.arlingtonva.us/sewer/water-pretreatment-program/
- For direct impacts to stream and jurisdictional wetlands, a Joint Permit Application could be required for state and federal permitting. Obtaining coverage typically also requires an endangered and threated species assessment and a cultural resources survey. ACG does not issue these permits.

If there is no site contamination, direct impacts to stream and jurisdictional wetlands, or floodplain issues, no environmental approvals would be needed by Virginia or the Federal Government. Regarding the inquiry about permit integration, following site plan approval, a development project completes the Civil Engineering Plan review process (involving all County-related environmental requirement/permitting), typically prior to the submission of building permit applications. Building permit applications would not be approved before Civil Engineering Plan approval.

Real Estate | Environment | Studies Permit(s)

C6. Process: briefly describe the environmental study and permit processes, from preliminary discussions to final action, including any appeal periods. Also include the total costs for a building permit.

The current maximum cost for a commercial LDA permit is about $65,000; the existing E&S and SWM fees would increase by 30% starting July 1, 2018; there are also some new fees. So, the estimated maximum LDA permit fee is $65,000x1.3 = $84,500.

For benchmarking purposes, based on four commercial building projects located near a Metro station in Arlington County, the average time frame from submission to final approval is six to 10 months. This timing greatly depends on the plan quality and response time by the development engineering and design team; the County has a set timeline for review, and always completes its review before the due date.

https://building.arlingtonva.us/from-planning-to-move-in-building-process-overview/

Real Estate | Environment | Code(s), Regulations

C7.a. Include with your response a copy of the relevant state and local environmental code(s) and regulations. (Federal statutes and regulations need not be included with your response.)
C7.b. Are amendments to the relevant environmental code(s) and regulations pending or proposed?
    If Yes, please provide detail

Virginia seeks a balanced approach to regulatory oversight, encouraging input from all segments of the community.

Whenever possible, Virginia seeks to moderate costs and inefficiencies, recognizing that unnecessary administrative and regulatory barriers affect business productivity and competitiveness. As a part of this ongoing vigilance, all state regulatory agencies routinely review their business regulations for opportunities to deregulate or streamline procedures. Virginia's environmental permits rarely require more than what is mandated by the U.S. EPA when there is an applicable federal program. In cases of state-only programs, Virginia's requirements are based on those necessary to protect public health, safety, and welfare in the most efficient, cost effective manner.

It is not expected that this project would require environmental permits issued by the Virginia Department of Environmental Quality (DEQ).

However, should the project need a DEQ issued permit, the timing of an individual decision depends on the type of permit required and the time when a complete application is submitted to DEQ. DEQ will work with the company during the application process to speed up the completion of the application and the approval process. DEQ has historically provided the highest priority to processing environmental permits for new and expanding businesses and offers a single point of contact to assist businesses with coordination of the permitting processes.

Virginia's local governments also offer streamlined permitting processes and provide dedicated project managers to assist companies through the planning and construction process. The required permits mentioned previously include building permits, Land Disturbing Activity (LDA) Permit, and Stormwater management.

Are amendments to the relevant environmental code(s) and regulations pending or proposed?
☒ No

Real Estate | Environment | Code(s), Regulations | Noose Restrictions

C8. Noise Restrictions: detail all noise restrictions or limitations affecting Site and any exceptions to or exemptions from same. Attach the appropriate statutory and other authorities.

While there are no noise restrictions or limitations on the activity of a business operating in Capital View – Rosslyn HQ2, there are noise ordinances regarding construction activity. We can provide that information upon request.

Real Estate | Building

D1. Permits: specify all required building permits, and name government issuer of same.

Arlington County requires the following building permits for new construction, all of which are issued administratively following discretionary approval of entitlements such as rezoning, Phased Development Site Plans, and Final Site Plans (also known as a "site plan"):

- Right of Way Permit
- Clearing/Grading Permit
- Demolition Permit
- Excavation, Sheeting, and Shoring Permit
- Footing to Grade Permit
- Building Permit
- Shell and Core Permit (Certificate of Occupancy)
- Partial Certificate of Occupancy
- Full Certificate of Occupancy
- Master Certificate of Occupancy

All these permits require plan review and issuance by the respective local jurisdictional permit/inspections review department. The issuer is Arlington Inspection Service Division.

Real Estate | Building | Process

D2.a. Briefly describe the building permit process, from pre-application discussions to final action, including any appeal periods.

D2.b. Briefly describe the estimated cost to obtain a building permit for the project. Please attach a copy of the building permit ordinance.

In its customer service orientation, Arlington County has dedicated resources and services to help developers, design professionals, and contractors understand our locality's permit process and support your project.

Communication is key. We have processes in place to allow for projects to be conceptually discussed and feedback given prior to submitting plans. Multiple departments work together and coordinate to improve customer service, and ultimately save time and money for applicants.

- For any new building, the process typically involves initial discussions with County Planning staff, followed by the public design review and ending with an approval by the County legislative body.

- Following approval of a development, there is a 30-day appeal period prior to the order becoming final.

- In Virginia, decisions made on these issues by the County Board are given significant deference, and as a result, there will be an extremely high burden of proof needed to overturn such a decision.

After the entitlement process, the design is completed and submitted for building permits.

- Permits are administrative in nature and are specifically reviewed for code compliance and life safety as primary goals.

- These are issued by a large, professional building inspections team in both jurisdictions and have no appeals period.

Arlington County building permit fees are $0.75 per gross square foot of total floor area, a 2% USBC fee, a 5% automation fee, and a 15% indirect cost surcharge.

Depending on the specific actions associated with a development project (e.g. site plan application, rezoning, etc.), the estimated cost to permit the project can vary.

As a hypothetical scenario for benchmarking, assuming a 500,000-square-foot new commercial office building on a 2-acre site, the estimated fees to the County to entitle and permit the construction of the project are as presented below:

Example of Building Permit Fee for Like Project
(assumes 500,000 square-foot-building on 2-acre site)

Building Permit Fee	$ 375,000.00	
LDA Permit Fee	$ 55,000.00	(est. max.)
Total Above Fees	**$ 430,000.00**	

As a second hypothetical scenario for benchmarking, assuming a 250,000-square-foot new commercial office building on a 1-acre site, the estimated costs of fees to the County to entitle and permit the construction of the project are as presented below:

Example of Building Permit Fee for Like Project
(assumes 250,000 square foot building on 1-acre site)

Building Permit Fee	$ 187,500.00	
LDA Permit Fee	$ 55,000.00	(est. max.)
Total Above Fees	**$ 242,500.00**	

The link to the relevant Virginia Codes is: https://codes.iccsafe.org/public/collections/VA

Real Estate | Building | Process

D3. Timetable: outline the timetable for a building permit process for a project such as that proposed by the Project and include whether the community can commit to a timetable for approval.

The timeline for obtaining building permits following entitlement varies depending on the complexity of the project.

However, typical timelines are around three months of County review (not including developer time to respond to County comments) for a significant project. In this case, we would create a specialized team to review projects. As a result, the process for building permits will be expedited further for technology users in these jurisdictions. Permits are typically issued before their needed dates based upon customary construction schedules in both jurisdictions.

Real Estate | Building | Process | Restrictions
D4. Restrictions: outline any height restrictions relevant to Site.

Permissible building heights in Rosslyn vary according to a height map in the Rosslyn Sector Plan, with typical permitted heights ranging from 230 feet to 390 feet.

Heights greater than those shown on the height map may be approved based on site specific considerations, provided additional density above a 10.0 FAR is not also requested. Additional density above a 10.0 FAR is permitted with an approved transfer of density rights.

See Exhibit 9, Rosslyn Sector Plan Height Map.

Real Estate | Utilities

E. For each of the following utilities/services, list the name of the utility/service provider, the person assigned to work with the Project and the relevant contact information for that person.
- Water
- Wastewater
- Electricity
- Natural Gas
- Solid Waste
- Drainage/Storm Water
- Telecommunications
- Broadband

Water
Arlington County: Greg Emmanuel, (703) 228-5022

Wastewater
Arlington County: Greg Emmanuel, (703) 228-5022

Electricity
Dominion Electric: Ken Holmes, (703) 838-2478

Natural Gas
Washington Gas: Pat Estrada-Palma, (703) 750-5657

Solid Waste
Arlington County: Greg Emmanuel, (703) 228-5022

Drainage/Storm Water
Arlington County: Greg Emmanuel, (703) 228-5022

Telecommunications
Verizon Communications: Al Attillis, (703) 212-6897
Comcast Communications: Gustavo Castellon, (703) 926-0534

Broadband
Level3, AboveNet, Jones Communications, MCI
Arlington County: Jack Belcher, (703) 228-3220

All utilities, wet and dry, are available within the site of size and location to support all anticipated, approved densities needed for HQ2.

Real Estate | Utilities | Cost: Water

E1. Water: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned.
E1.a.(i). Impact Fee
E1.a.(ii). Extension of water line(s)
E1.a.(iii). Installation of water line(s)
E1.a.(iv). Tap Fee(s)
E1.a.(v). Other relevant fees and assessments

Arlington County is the service provider for the Capital View – Rosslyn HQ2 site.

There is a fully developed water distribution system already in place, generally aligned with the existing urban street system that has the capacity to support existing development and additional planned infill.

Given the above condition, for phases of development that are repurposing existing buildings, no water distribution upgrades are expected.

Costs would only include typical permitting fees and additional drainage fixture fees ($200/dfu per attachment) if any internal tenant build-out resulted in additional plumbing fixtures.

For any new building construction, fees would be handled on a site-specific basis, based on the number of drainage fixture units (DFUs), distance to a main, etc.

Because the primary infrastructure is in place, the maximum typical investment would be a water line for one block.

The site-specific conditions vary substantially, including impact on the adjacent right of way. For order of magnitude comparisons, we extrapolated fees from a recent new office construction on a major arterial, and normalized to a 300,000-square-foot size, and included the various fees for the right of way that were affected during the construction period. During lane closures, multiple utilities such as water, sewer, gas, communications, and electrical are constructed simultaneously.
The estimates are based on fees recently charged by Arlington for a similarly-sized commercial/office building adjacent to the Capital View site, adjusted for a 300,000-square-foot floor area:

DFU's (includes a 4" water meter typical for this size building)	$90,000
Right-of-way use permit for work in the r/w	$5,000
Transportation Right-of-way Use Permit for lane, trail, or sidewalk closures, parking meter removals (for all building and utility-related construction)	$150,000
Civil Engineering plan review and approval (for all building and utility-related infrastructure)	$30,000
Typical public infrastructure improvements based on building in similar County location include site-specific water, sewer, storm, curb, gutter, sidewalk, streetlights, and street trees	$400,000
Public improvement bond processing fees (for all public infrastructure)	$2,500

Total cost estimate for Utilities and Right of Way	$677,500 ~$700,000

Impact Fee:
None.

Extension of water line(s):
This is determined on a site-specific basis for a development project and relates to the distance required to connect to an existing adjacent water main in the street. This cost is generally born by the developer.

Installation of water line(s):
This is undertaken on a site-specific basis for a development project and is incorporated into the overall development project cost.

Tap Fee(s):
Arlington charges a DFU fee by unit for development projects that incorporates the building water meter.

Other relevant fees and assessments:
See chart for an overall estimate of fees and infrastructure improvements for a typical 300,000-square-foot office building. Water lines and service is not segregated out as a separate set of plan review, permitting, and inspection fees. This work is built into the large civil engineering package that is reviewed, permitted, and inspected by the County; all items other than the DFUs are captured this way.

Real Estate | Utilities | Cost: Wastewater

E2. Wastewater: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned.
E2.a.(i). Impact Fee
E2.a.(ii). Extension of sewage line(s)
E2.a.(iii). Installation of sewage line(s)
E2.a.(iv). Tap Fee(s)
E2.a.(v). Other relevant fees and assessments

Arlington County is the service provider for the Capital View – Rosslyn HQ2 site.

There is a fully developed wastewater collection system generally aligned with the existing urban street system, and a wastewater treatment system that has the capacity to support existing development and planned infill.

For phases of development that are repurposing existing buildings, no sewer distribution upgrades are expected.

Costs would only include typical permitting fees and additional drainage fixture fees ($200/dfu per attachment) if any internal tenant build-out resulted in additional plumbing fixtures.

For any new building construction fees, would be handled on a site-specific basis, based on the number of drainage fixture units, distance to a main, etc. Because the primary infrastructure is in place, the maximum typical investment would be a sewer line for one block.

DFU's (includes a 4" water meter typical for this size building)	$90,000
Right-of-way use permit for work in the r/w	$5,000
Transportation Right-of-Way Use Permit for lane, trail or sidewalk closures, parking meter removals (for all building and utility related construction)	$150,000
Civil Engineering plan review and approval (for all building and utility-related development)	$30,000
Typical public infrastructure improvements based on building in similar County location include site-specific water, sewer, storm, curb, gutter, sidewalk, streetlights, and street trees	$400,000
Public improvement bond processing fees (for all public infrastructure)	$2,500
Total cost estimate for utilities and Right of Way	**$677,500 ~$700,000**

Notional costs for all utility, right of way costs on an arterial for a 300,000-square-foot office building are listed above.

Impact Fee:
There are no impact fees associated with the Capital View – Rosslyn HQ2 site.

Extension of sewage line(s):
This is determined on a site-specific basis for a development project and related to the distance required to connect to an existing adjacent sewer main in the street. This cost is generally born by the developer.

Installation of wastewater line(s):
This is determined on a site-specific basis for a development project and is incorporated into the overall development project cost.

Tap Fee(s):
Tap fees are based on DFUs.

Other relevant fees and assessments:
See chart above.

Real Estate | Utilities | Cost: Electricity

E3. Electricity: Please provide name of service provider, distance to Site, if dual feed available, capacity of line and system (including peak usage), and any capital improvements planned.

E3.a. What is the expected proportion of renewable energy in the utility's generation mix over the next 20 years?

E3.c. What options are currently available to purchase power at Site on the open market?

E3.d. What is the cost per kWh?

Dominion Energy is the service provider. Dominion is a regulated monopoly serving Virginia.
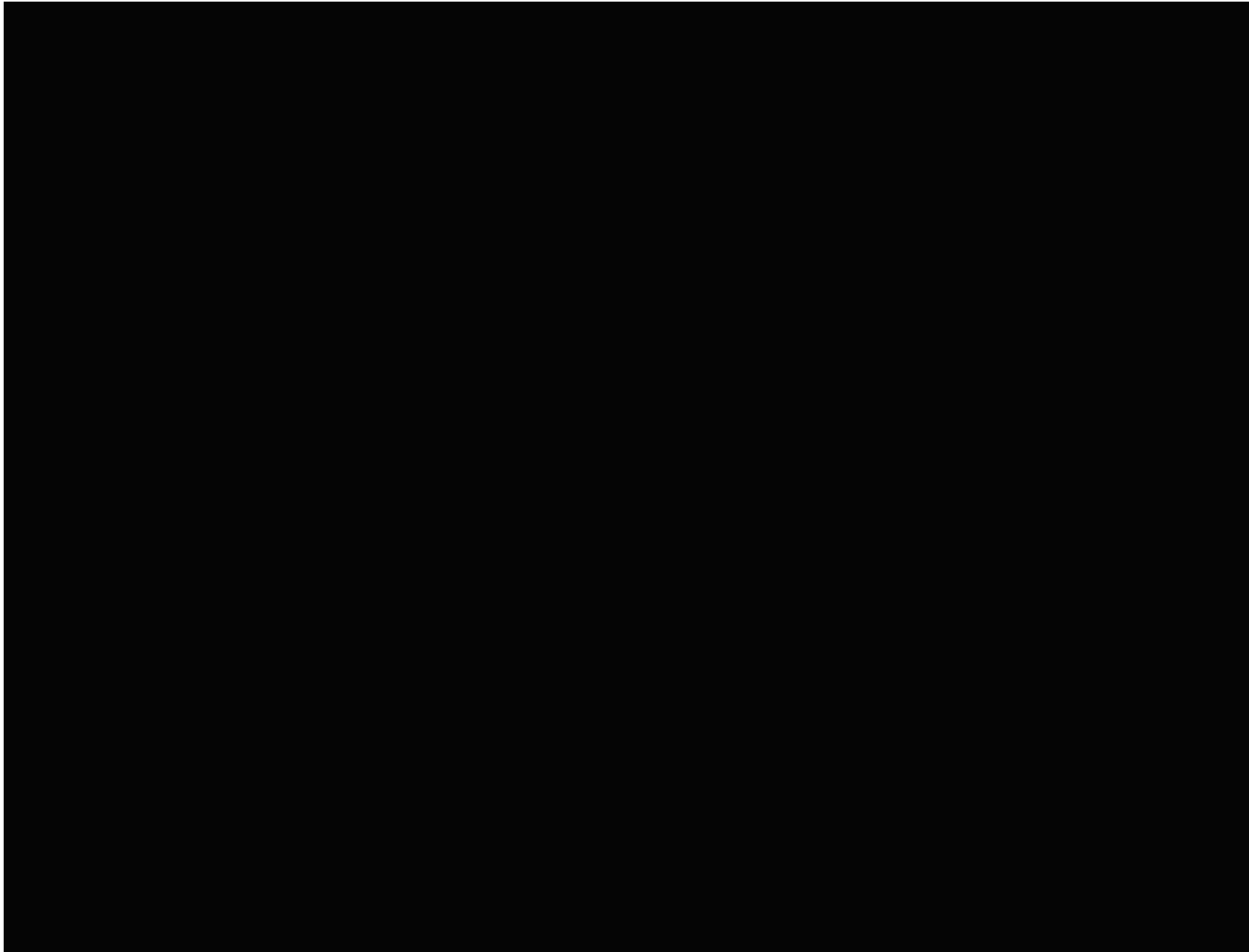
Electric service provided by Dominion is already available at the site. The utility is headquartered in Richmond (108 miles away), with a regional operations center in Herndon (27 miles away), and a local operations office for repairs and construction in Alexandria (4 miles away).

Dual feed, if not already available, can be provided by Dominion Energy at any site. Dominion is happy to discuss specifics regarding alternate feeds with the Project once a specific site is identified and more details about the site plan are finalized.

Capacity of line and system: Dominion does not have any capacity concerns in this area and will be happy to discuss specific site needs with the customer as a final location is identified.

Dominion Energy routinely evaluates need for capital improvements in our system and is constantly upgrading areas of need. There is also new legislation, The Grid Transformation and Security Act, that is being reviewed at the state level with provisions to further upgrade and modernize the electric grid.

According to Dominion's 2017 Integrated Resource Plan (IRP), the company forecasts between 5,280 and 5,760 MW of renewables in 2035.

These amounts represent 22%-24% of Dominion's projected total capacity of 24,244 MW in 2035. The Arlington County Community Energy Plan, an element of the County's Comprehensive Plan, set a target for 160 MW of solar electric capacity installed within its borders, with many residential, commercial, and institutional purchases in the queue, including power purchase agreements.

Options are readily available for 100% renewable energy through Dominion Energy on its 100% renewable tariff, and through the power purchase agreements, both physical and virtual.

Amazon already has such arrangements with Dominion and others in Virginia.
Dominion Energy Virginia currently offers the following programs for renewable energy rates and programs:

Solar Partnership Program (SPP)
The SPP is a demonstration program in which the company is authorized to construct and operate up to 30 MW (DC) of company-owned solar DG facilities on leased commercial and industrial customer property and in community settings. This is intended as a five-year demonstration program to study the benefits and impacts of solar DG on targeted distribution circuits. More information can be found on the SCC website under Case No. PUE-2011-00117 and on the company's website:
https://www.dom.com/large-business/renewable-energy-programs/solar-partnership-program.

Real Estate | Transportation | Air

F1.a. Nearest Airport: name, distance to Site, number of passenger carrier service providers. Also include any planned, funded and approved capital improvements to the airport.

F1.b. Detail daily scheduled service, including flights to Seattle, New York City, San Francisco/Bay Area, and Washington, D.C.

F1.c. Next nearest Airport

Capital View is immediately served by two major airports, both among the top 100 worldwide in commercial passengers.

Washington Dulles International Airport ("Dulles") and Ronald Reagan Washington National Airport ("National") are both easily accessible to Capital View. Metrorail provides existing service to National on the Blue and Yellow Lines and will begin serving Dulles in 2020 via the Silver Line.

National Airport

Located in Arlington County, National is 4.2 miles to Capital View. Ten passenger carrier service providers operate through National, providing 416 daily departures to 95 domestic and international locations. Daily non-stop flight schedules include an average of two flights to Seattle, 33 flights to New York City, and two flights to San Francisco.

Significant planned improvements to National:

- Project Journey: a $1 billion multi-year project that includes construction of two new security checkpoints that fully connect the concourse level of Terminal B/C to airline gate areas, buildout of an enclosed commuter concourse to replace the 14 outdoor gates currently serviced by buses from gate 35X, and future improvements to roadway and parking configurations.

Dulles Airport

Located in Loudoun and Fairfax counties, Dulles is 23.9 miles to Capital View. A total of 38 passenger carrier service providers operate through Dulles, providing 326 daily departures to 135 domestic and international locations.

Significant planned improvements to Dulles:

- Dulles Corridor Metrorail Project: a 23-mile extension of Washington's existing Metrorail System. It is being built in two phases by the Metropolitan Washington Airports Authority (MWAA). Phase 1 of the new line opened on July 26, 2014, connecting East Falls Church with Tysons and Reston, Virginia's largest employment centers, with downtown Washington and Largo, Maryland. Known as the Silver Line, the extension is operated by the Metropolitan Washington Area Transit Authority (WMATA). Preliminary construction for Phase 2 began in 2014. It will run from the eastern edge of Reston west to Washington Dulles International Airport and to Ashburn in eastern Loudoun County. When both phases are complete, the line will provide a one-seat, no transfer ride from Dulles to downtown Washington, creating long-sought after connectivity between the rapidly expanding Dulles corridor and the nation's capital. The extension includes 11 new stations.

- Future Fifth Runway: space exists for an east-west runway approximately 10,500 feet long and 150 feet wide. It will be parallel to existing runway 12-30 near the south side of the airport. Construction dates for the fifth runway will be set in the future. (Note: Land has been acquired and the runway was approved by the FAA. However, the project's funding and schedule have not been determined.)

Capital View

National Airport is a 10-minute Metrorail ride from the Capital View site, via a direct connection on the Blue Line from Rosslyn. Dulles Airport is currently accessible via the Silver Line connecting to the Washington Flyer express bus, with full direct Metrorail service to Dulles beginning in 2020. Additionally, a direct limited stop bus connects Capital View to Dulles via Metrobus route 5A.

Daily scheduled service, including flights to Seattle, New York City, San Francisco/Bay Area, and Washington, D.C.:

From National

Daily non-stop flight schedules include an average of two flights to Seattle, 33 flights to New York City, and two flights to San Francisco. This link provides more detail on flights from National, including time of day and airline information.
http://www.flyreagan.com/dca/flight-guide

From Dulles

Daily non-stop flight schedules include an average of five flights to Seattle, 16 flights to New York City, and 12 flights to San Francisco. This link provides more detail on flights from Dulles, including time of day and airline information:
http://www.flydulles.com/iad/flight-guide

From BWI

Daily non-stop flight schedules include an average of three flights to Seattle, eight flights to New York City, and seven flights to San Francisco, Oakland, and San Jose. This link provides more detail on flights from BWI, including time of day and airline information. https://www.bwiairport.com/flying-with-us/flights

DEPARTURES FROM RONALD REAGAN NATIONAL AIRPORT
Weekly flight schedules to select cities (based on July 2018 flight schedules)

Flights to New York City

DCA to EWR   198 Miles   ~1h 5m   2 Airlines

Airline	Flight #	Depart DCA	Arrive EWR	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	4348	6:55 AM	8:00 AM	•	•	•	•	•	•		Y
United	4241	8:30 AM	9:32 AM	•	•	•	•	•		-	Y
United	4281	11:00 AM	12:07 PM	•	•	•	•	•	•	•	Y
United	4402	2:36 PM	3:52 PM	•	•	•	•	•	•	•	Y
United	4049	5:00 PM	6:09 PM	•	•	•	•	•	•	•	
United	4254	5:45 PM	7:09 PM	•	•	•	•	•	•	•	
United	4195	6:59 PM	8:06 PM	•	•	•	•	•		•	
United	4081	9:30 PM	10:43 PM	•	•	•	•	•		•	

DCA to JFK   212 Miles   ~1h 31m   18 Airlines

Airline	Flight #	Depart DCA	Arrive JFK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	5877	6:00 AM	7:16 AM	•	•	•	•	•	•	•	Y
Delta	5878	9:00 AM	10:15 AM	•	•	•	•	•	•	•	Y
Aerolineas Argentinas	7029	10:00 AM	11:15 AM	•	•	•	•	•	•	•	
Delta	5904	11:00 AM	12:17 PM	•	•	•	•	•		•	Y
American Airlines	4332	12:50 PM	2:21 PM	•	•	•	•	•	•	•	Y
Delta	5951	2:00 PM	3:30 PM	•	•	•	•	•	•	•	Y
American Airlines	4735	2:55 PM	4:11 PM	•	•	•	•	•	•	•	Y
Delta	5896	5:07 PM	6:45 PM	•	•	•	•	•	•	•	Y
American Airlines	252	5:50 PM	7:33 PM	•	•	•	•	•	•	•	Y
American Airlines	4350	6:51 PM	8:15 PM	•	•	•	•	•	•	•	Y

DCA to LGA   214 miles   ~1h 04m   2 Airlines

Airline	Flight #	Depart DCA	Arrive LGA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta/American Airlines	6132/4756	6:00 AM	7:06 AM	•	•	•	•	•			Y
Delta/American Airlines	6134/2144	7:00 AM	8:16 AM	•	•	•	•	•			Y
Delta/American Airlines	6136/2125	8:00 AM	9:32 AM	•	•	•	•	•	•		Y
Delta/American Airlines	6138/4755	9:00 AM	10:32 AM	•	•	•	•	•	•	•	Y
American Airlines	4757	10:00 AM	11:25 AM	•	•	•	•	•	•		
Delta	6140	11:00 AM	12:19 PM	•	•	•	•	•	•	•	
American Airlines	2135	12:00 PM	1:15 PM	•	•	•	•	•	•	•	
Delta	6142	1:00 PM	2:16 PM	•	•	•	•	•	•	•	
Delta/American Airlines	6144/4767	2:00 PM	3:22 PM	•	•	•	•	•	•	•	Y
Delta/American Airlines	6146/4750	3:00 PM	4:21 PM	•	•	•	•	•		•	Y
Delta	6148	4:00 PM	5:34 PM	•	•	•	•	•		•	Y
Delta/American Airlines	6150/4764	5:00 PM	6:23 PM	•	•	•	•	•		•	Y
American Airlines	6152/4752	6:00 PM	7:20 PM	•	•	•	•	•		•	Y
Delta/American Airlines	6154/4753	7:00 PM	8:20 PM	•	•	•	•	•		•	Y
American Airlines	2117	10:00 PM	11:04 PM	•	•	•	•	•		•	

Flights to Seattle

DCA to SEA   2,321 miles   ~5h 45m   2 Airlines

Airline	Flight #	Depart DCA	Arrive SEA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Alaska Airlines	1	8:00 AM	10:45 AM	•	•	•	•	•	•	•	Y
Alaska Airlines	3	6:40 PM	9:25 PM	•	•	•	•	•	•	•	

Flights to San Francisco

DCA to SFO   2,435 miles   ~5h 59m   3 Airlines

Airline	Flight #	Depart DCA	Arrive SFO	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	2042	8:30 AM	11:35 AM	•	•	•	•	•	•	•	
Alaska Airlines	1002	5:30 PM	8:29 PM	•	•	•	•	•	•	•	Y

DEPARTURES FROM DULLES INTERNATIONAL AIRPORT
Weekly flight schedules to select cities (based on July 2018 flight schedules)

Flights to New York City

IAD to EWR 211 Miles ~1h 32m 6 Airlines

Airline	Flight #	Depart IAD	Arrive EWR	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	4933	6:00 AM	7:31 AM	•	•	•	•	•	•	•	
United	2250	8:15 AM	9:46 AM	•	•	•	•	•	•	•	Y
United	1811	12:32 PM	2:21 PM	•	•	•	•	•	•	•	Y
United	1972	5:20 PM	6:52 PM	•	•	•	•	•	•	•	Y
United	4965	7:14 PM	8:42 PM	•	•	•	•	•	•	•	
United	965	10:00 PM	11:29 PM	•	•	•	•	•	•	•	Y

IAD to JFK 227 Miles ~1h 28m 22 Airlines

Airline	Flight #	Depart IAD	Arrive JFK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	4064	6:00 AM	7:28 AM	•	•	•	•	•	•	•	Y
JetBlue	1208	6:30 AM	7:44 AM	•	•	•	•	•	•	•	Y
Delta	3966	10:00 AM	11:14 AM	•	•	•	•	•	•	•	Y
JetBlue	1308	11:29 AM	12:44 PM	•	•	•	•	•	•	•	Y
Delta	3959	4:20 PM	5:53 PM	•	•	•	•	•	•	•	Y
JetBlue	1808	8:27 PM	9:59 PM	•	•	•	•	•	•	•	Y

IAD to LGA 228 miles ~1h 17m 4 Airlines

Airline	Flight #	Depart IAD	Arrive LGA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	6255	8:15 AM	9:31 AM	•	•	•	•	•	•	•	Y
United	6055	12:35 PM	1:49 PM	•	•	•	•	•	•	•	Y
United	6334	5:08 PM	6:25 PM	•	•	•	•	•	•	•	Y
United	6337	10:05 PM	11:22 PM	•	•	•	•	•	•	•	Y

Flights to Seattle

IAD to SEA 2,298 miles ~5h 55m 11 Airlines

Airline	Flight #	Depart IAD	Arrive SEA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	1838	7:05 AM	9:55 AM	•	•	•	•	•	•	•	
United	389	8:36 AM	11:07 AM	•	•	•	•	•	•	•	Y
Alaska Airlines	859	9:20 AM	12:15 PM	•	•	•	•	•	•	•	
United	357	12:36 PM	3:15 PM	•	•	•	•	•	•	•	
United	326	5:37 PM	8:12 PM	•	•	•	•	•	•	•	Y

Flights to San Francisco

IAD to SFO 2,412 miles ~5h 52m 14 Airlines

Airline	Flight #	Depart IAD	Arrive SFO	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Alaska Airlines	1069	6:20 AM	9:05 AM	•	•	•	•	•	•	•	Y
United	1881	6:48 AM	9:40 AM	•	•	•	•	•	•	•	Y
United	424	8:18 AM	11:10 AM	•	•	•	•	•	•	•	Y
United	1763	9:15 AM	12:07 PM	•	•	•	•	•	•	•	Y
Alaska Airlines	1071	9:50 AM	12:30 PM	•	•	•	•	•	•	•	Y
United	525	12:40 PM	3:30 PM	•	•	•	•	•	•	•	Y
United	560	3:47 PM	6:24 PM	•	•	•	•	•	•	•	Y
United	340	5:16 PM	8:11 PM	•	•	•	•	•	•	•	Y
Alaska Airlines	1077	6:30 PM	9:25 PM	•	•	•	•	•	•	•	Y
United	1893	7:01 PM	9:55 PM	•	•	•	•	•	•	•	Y
United	2274	7:54 PM	10:39 PM	•	•	•	•	•	•	•	Y
United	225	10:00 PM	1:01 AM	•	•	•	•	•	•	•	Y

DEPARTURES FROM BALTIMORE-WASHINGTON INTERNATIONAL AIRPORT
Weekly flight schedules to select cities (based on July 2018 flight schedules)

Flights to New York City

BWI to EWR   169 Miles   ~1h 20m   3 Airlines

Airline	Flight #	Depart BWI	Arrive EWR	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	4067	6:00 AM	7:07 AM	•	•	•	•	•	•	•	
United	4100	10:42 AM	11:50 AM	•	•	•	•	•	•	•	Y
United	4373	2:40 PM	4:10 PM	•	•	•	•	•	•	•	Y
United	4433	4:51 PM	6:11 PM	•	•	•	•	•	•	•	Y

BWI to JFK   183 Miles   ~1h 23m   17 Airlines

Airline	Flight #	Depart BWI	Arrive JFK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	3431	6:35 AM	7:53 AM	•	•	•	•	•	•	•	Y
Delta	3612	10:45 AM	11:56 AM	•	•	•	•	•	•	•	Y
American Airlines	4001	12:36 PM	1:52 PM	•	•	•	•	•	•	•	Y
Delta	3944	5:00 PM	6:23 PM	•	•	•	•	•	•	•	Y

Flights to Seattle

BWI to SEA   2,327 miles   ~5h 55m   3 Airlines

Airline	Flight #	Depart BWI	Arrive SEA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Spirit Airlines	263	7:20 AM	10:06 AM	•	•	•	•	•	•	•	
Southwest	546	2:25 PM	5:15 PM	•	•	•	•	•			
Southwest	5406	2:40 PM	5:25 PM							•	
Southwest	4263	3:30 PM	6:20 PM						•		
Alaska Airlines	765	7:15 PM	10:10 PM	•	•	•	•	•	•	•	

Flights to San Francisco, San Jose, and Oakland

BWI to SFO   2,450 miles   ~6h 17m   5 Airlines

Airline	Flight #	Depart BWI	Arrive SFO	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	753	6:30 AM	9:47 AM	•	•	•	•	•	•	•	Y
Alaska Airlines	1127	5:25 PM	8:42 PM	•	•	•	•	•	•	•	Y
United	2059	6:55 PM	9:40 PM	•	•	•	•	•		•	Y

BWI to SJC   2,431 Miles   ~5h 50m   1 Airline

Airline	Flight #	Depart BWI	Arrive SJC	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Southwest	2276	1:30 PM	4:15 PM	•	•	•	•	•			
Southwest	4222	2:50 PM	5:35 PM							•	
Southwest	4904	3:30 PM	6:20 PM						•		

BWI to OAK   2,439 Miles   ~5h 47m   2 Airlines

Airline	Flight #	Depart BWI	Arrive OAK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Southwest	1613	9:00 AM	11:50 AM	•	•	•	•	•			
Southwest	5727	10:05 AM	12:50 PM						•		
Southwest	417	1:30 PM	4:20 PM	•	•	•	•	•			
Southwest	3179	2:20 PM	5:05 PM							•	
Spirit Airlines	583	3:05 PM	5:52 PM	•	•	•	•	•	•	•	
Southwest	4239	3:40 PM	6:30 PM						•		

Capital View is also served by Baltimore-Washington International Airport ("BWI") in Anne Arundel County, Maryland.

BWI is 37.2 miles to Capital View. 19 commercial airlines serve BWI, providing 343 daily departures to 80 destinations. Daily non-stop flight schedules include an average of three flights to Seattle, eight flights to New York City, and seven flights to San Francisco, Oakland, and San Jose.

Significant planned improvements to BWI:
- Concourse D and E Connector Project: provides additional international airline capacity and new passenger services, including a new security checkpoint to serve domestic and international passengers. (page MAA-4)
- Concourse E Expansion Project: consists of extending the international terminal by 150 feet for six additional gates. (page MAA-7)

Additional projects may be found at:
http://www.mdot.maryland.gov/newMDOT/Planning/CTP/CTP_18_23_Final/MAA-1 MDOT Maryland Aviation Administration.pdf

Amtrak also provides excellent intercity passenger rail connections from Northern Virginia, particularly to destinations in the Northeast corridor (i.e., Baltimore, Philadelphia, New York City, and Boston).

More than 40 trains per day connect Alexandria's Amtrak station to/from New York's Penn Station, and 100 trains per day connect New York to/from Washington's Union Station (including 30 high-speed Acela trains per day).

Real Estate | Transportation | Roads

F2. Roads: describe road access to Site and any planned improvements. Include details of how employees may commute into Site via personal auto or rideshare. Use specific highway names, road names, bridges, etc.

Rosslyn is served by an extensive regional and local road network, including I-66, Route 50/Arlington Boulevard, Route 29 Lee Highway, George Washington Memorial Parkway, Route 110, Route 237, and three bridges connecting to the District of Columbia: Key Bridge, Teddy Roosevelt Bridge, and Memorial Bridge. The Rosslyn street network has direct accessibility from each of these facilities, making it one of the most accessible sites in the Capital region. According to the Environmental Protection Agency's Smart Location Database, approximately 450,000 working-age individuals are within a 45-minute drive.[1]

Recent investments on the regional road network include converting I-66 inside the Beltway to a high occupancy toll facility during peak travel periods, with plans to add a third lane eastbound between the Dulles Toll Road and Ballston.

Though the conversion of I-66 to a high-occupancy toll facility is only a few months old, preliminary data indicates that the project is providing faster and more reliable trip times for carpoolers or those solo drivers who choose to pay tolls for access. Eastbound morning-peak trips between the I-495 Beltway and the Memorial Bridge to Washington, D.C., dropped from an average of 19.3 minutes on Dec. 8, 2016, to 10.5 minutes on Dec. 7, 2017, a few days after tolling began. Westbound evening-peak trips declined from an average of 20.1 minutes on Dec. 8, 2016 to 11.0 minutes on Dec. 7, 2017.[2]

Rosslyn has an urban local street system that provides a high level of regional accessibility.

Arlington's focus has been to improve this street system for pedestrians, cyclists, and transit users while creating more focus on quality place-making. Prior investment in the street network has given the commercial heart of Rosslyn a "Very Walkable" Walk Score of 89. Arlington has more than $44.5 million in complete street projects planned for Rosslyn, which are in the County's approved 10-year Capital Improvement Program for additional improvements to the street network for multimodal transportation.

As with the road system, Rosslyn is one of the most centrally located places in the region for access to the trail network.

Two of the highest-use trails, the Custis Trail (with a direct link to the 43-mile W&OD Trail) and the Mount Vernon Trail, end in Rosslyn at the Key Bridge. Key Bridge has bicycle and pedestrian facilities that connect to another of the region's high-use trails, the Capital Crescent Trail in Georgetown. Arlington also provides bike lanes on most arterial streets in Rosslyn. Rosslyn's existing bike infrastructure has earned a "Very Bikeable" Bike Score of 76. Central Rosslyn also has eight Capital Bikeshare stations, integrating the neighborhood into the larger regional Capital Bikeshare system.

---

[1] https://www.epa.gov/smartgrowth/smart-location-mapping
[2] See https://ggwash.org/view/65923/nine-takeaways-from-the-newly-released-i-66-tolling-data

Real Estate | Transportation | Tram or Light Rail

F3. Tram or Light Rail: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.

F3.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure tram or light rail service to Site?

F3.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

There are no tram, light rail, or BRT services in Rosslyn.

Real Estate | Transportation | Metro or Subway

F4. Metro or Subway: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.

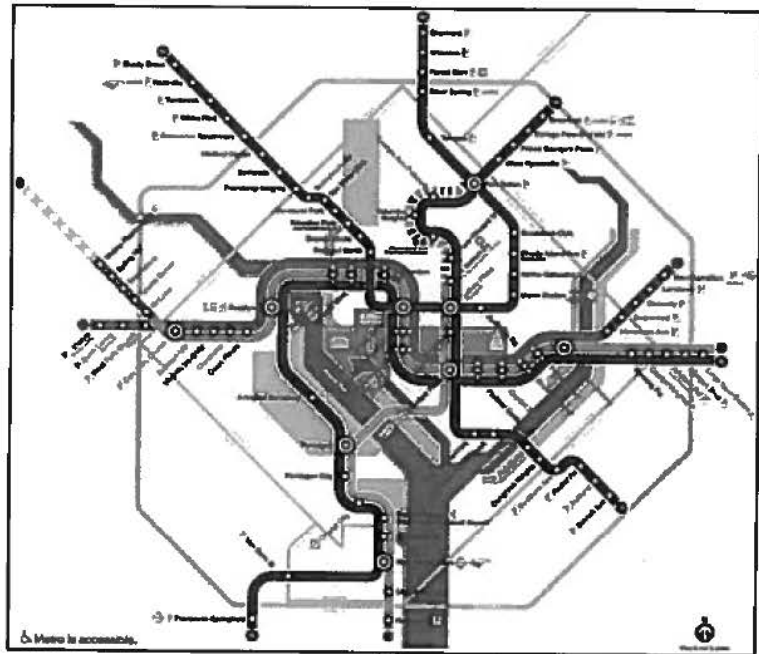F4.a. Extension or new service commitment

F4.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure metro service to Site?

F4.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Regional Overview

Metrorail, operated by the Washington Metropolitan Area Transit Authority (WMATA), is the backbone of transit service in Northern Virginia with four lines that serve and connect Arlington and Fairfax counties and the cities of Alexandria, Fairfax, and Falls Church to Washington D.C. and Montgomery and Prince George's counties in Maryland.

New Metrorail stations are being developed as part of an extension to the Metrorail Silver Line, and a Metrorail station at Dulles Airport will open in 2020. A new Metrorail station is opening at Potomac Yard in Alexandria in 2022. Metrorail carries between 600,000 and 700,000 riders per day and historically has the third-highest ridership of urban rail systems in the United States, behind only New York and Chicago. In FY17, Metrorail provided 90 million rider trips in Northern Virginia.

Metrorail consists of approximately 118 route miles, 91 passenger stations, and a fleet of over 1,100 railcars. Of Metrorail's six lines, four of them - Silver, Orange, Blue, and Yellow - serve Northern Virginia.

Metrorail operates 5:00 am to 11:30 pm Monday through Thursday, 5:00 am to 1:00 am on Friday, 7:00 am to 1:00 am on Saturday, and 8:00 am to 11:00 pm on Sunday. During peak periods Metrorail trains arrive on individual lines in Virginia every 8 minutes, with double or triple service (every 3-4 minutes) where multiple lines run together on the same track. During off-peak times, trains arrive on individual lines every 12-20 minutes, with double or triple service on multiple-line segments. Metrorail fares vary by time of day and the distance between stations. The base Metrorail fare is $2.25 and the maximum one-way fare is $6.00. The Metrorail uses regional SmarTrip fare media, which allows seamless transfers between Metrorail and all public bus systems in the region.

Thanks to Metrorail's fully exclusive right-of-way, Metrorail trains generally enjoy speed and reliability significantly greater than surface transit systems such as light rail or bus rapid transit.

Although a maintenance backlog negatively affected reliability in recent years, WMATA's recent "SafeTrack" and "Back2Good" initiatives, coupled with delivery of nearly 500 new railcars, have considerably improved reliability since 2016.

Between 2008 and 2015, Metrorail had 20 "major vehicle failures" (failures preventing vehicle movement) per million vehicle revenue miles and 1.7 "other vehicle failures" per million vehicle revenue miles - the 6th and 3rd lowest rates, respectively, among major metro/subway systems (Source: Washington Post 2016). From October to December 2017, Metrorail system wide on-time performance was 87%. During the time period covering July 2017 to December 2017, on-time performance by Metrorail line in Virginia was 88% on the Blue Line, 89% on the Orange Line, 89% on the Silver Line and 93% on the Yellow Line. In addition to high on-time performance, rail fleet reliability (i.e., rail mean distance between delays) has increased by 25% over the last six months (ending December 2017) from 69,466 miles to 87,225 miles (source: WMATA Vital Signs Report for October-December 2017).

To bolster rail customer service satisfaction, WMATA recently introduced its "Rush Hour Promise" that automatically refunds fares to customers if a rush hour trip on Metro is delayed by 15 minutes or more.

More information about the Metrorail service is available through the links below.
- Rail service guide: https://www.wmata.com/service/rail/
- New rider guide:https://www.wmata.com/rider-guide/new-riders/upload/pocket-guide-English.pdf
- "Back2Good" operations improvement initiative: https://www.wmata.com/back2good
- "SafeTrack" 2016-2017 track upgrade initiative: https://www.wmata.com/service/SafeTrack.cfm

SafeTrack was an accelerated track work plan that ran from June 2016 to June 2017 to address safety recommendations and rehabilitate the Metrorail system to improve safety and reliability. Through SafeTrack, Metro completed approximately three years' worth of maintenance and rehabilitation work in approximately one year. The plan significantly expanded maintenance time on weeknights, weekends, and midday hours and included 16 "Safety Surges"—long duration track outages for major projects in key parts of the system.

With the conclusion of the SafeTrack emergency maintenance program in June 2017, Metro customers have experienced improvements in service reliability. In December 2017, 88% of trips (13.6 million trips) arrived on time based on actual customer "tap in/tap out" travel time data. Metro credits the accelerated delivery of the new and popular 7000-series railcars—combined with the retirement of all 1000- and 4000-series railcars months ahead of schedule, fewer track delays, improved railcar maintenance and recent schedule adjustments—with helping to keep customers on time. Each month, another 20+ new 7000-series railcars arrive, with 50 of the new 7000-series trains (400 railcars) now in service and 100% of the new 7000-series cars expected to be delivered by the end of FY18.
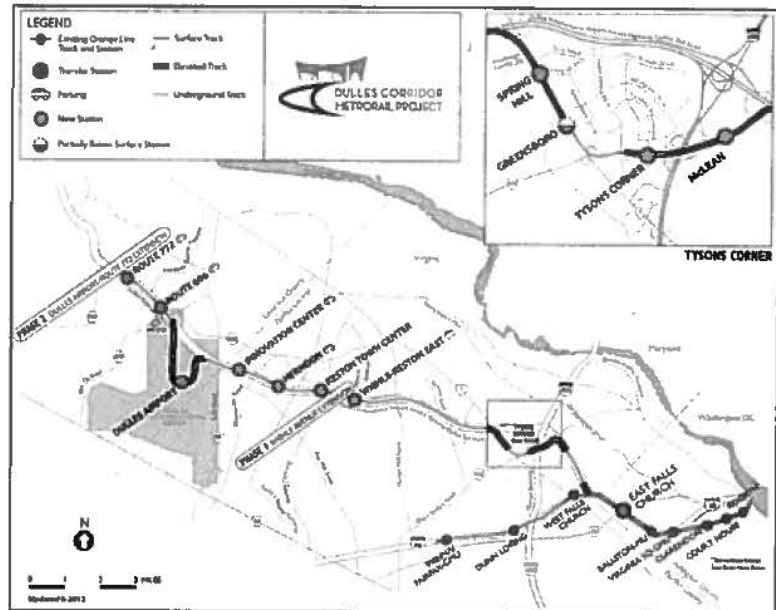
Metro's turnaround has been driven by the largest-ever annual capital investment in the system. The record setting $1.16 billion in capital funding spent in FY17, including $700 million in federal grant reimbursements, led to improved track infrastructure, railcar reliability, and escalator performance. Efforts to provide an additional $500 million per year are advancing in Virginia, Maryland, and Washington, D.C.

Dulles Corridor Metrorail Project (Silver Line extension)

The Dulles Corridor Metrorail Project will provide high-quality, high-capacity transit service in the Dulles Corridor and to provide a transit connection between the corridor, downtown Washington, and the Rosslyn-Ballston corridor in Arlington. The new Metrorail service (on the Silver Line) results in travel time savings and expands the reach of the existing Metrorail system, and offers a viable alternative to automobile travel and supports future development along the corridor.

Phase 1 of the project is complete and now provides Metrorail service from Washington, D.C., and Arlington County through Tysons to Wiehle Avenue on the eastern edge of Reston. Phase 2 is under construction now and will run from Reston west to Washington Dulles International Airport and beyond to Route 772/Ryan Road in Loudoun County, opening in 2020.

Capital View

At the Rosslyn Metrorail Station, Capital View is served by three of Metrorail's six rail lines (Blue, Orange, and Silver), providing access to a substantial portion of the region's workforce in Northern Virginia, D.C. and Maryland. Each of these lines operate at eight-minute peak period frequencies and 12-minute off-peak frequencies. Combined, Rosslyn has trains every two to three minutes in each direction during the peak travel periods. This station has recently been improved with a second entrance (opened in 2014) which provides three high-speed elevators from the street level to the station platform. Rosslyn is a core station in the Metrorail system with ridership that can exceed 25,000 passengers per weekday. The Rosslyn Metrorail Station is part of the infrastructure that has earned Rosslyn an "Excellent Transit" Transit Score of 75. According to the Environmental Protection Agency's Access to Jobs and Workers Via Transit Tool, about 21% of the region's workers can reach Rosslyn from home within 45 minutes on transit.

Extension or new service commitment:
Metrorail already provides service to the Capital View site.

Real Estate | Transportation | Commuter Train

F5. Commuter Train Service: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F5.a. Extension or new service commitment
F5.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure rail service to Site?
F5.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Commuter rail helps to connect residents living beyond the reach of Metrorail in Northern Virginia to jobs closer to the center of the region.
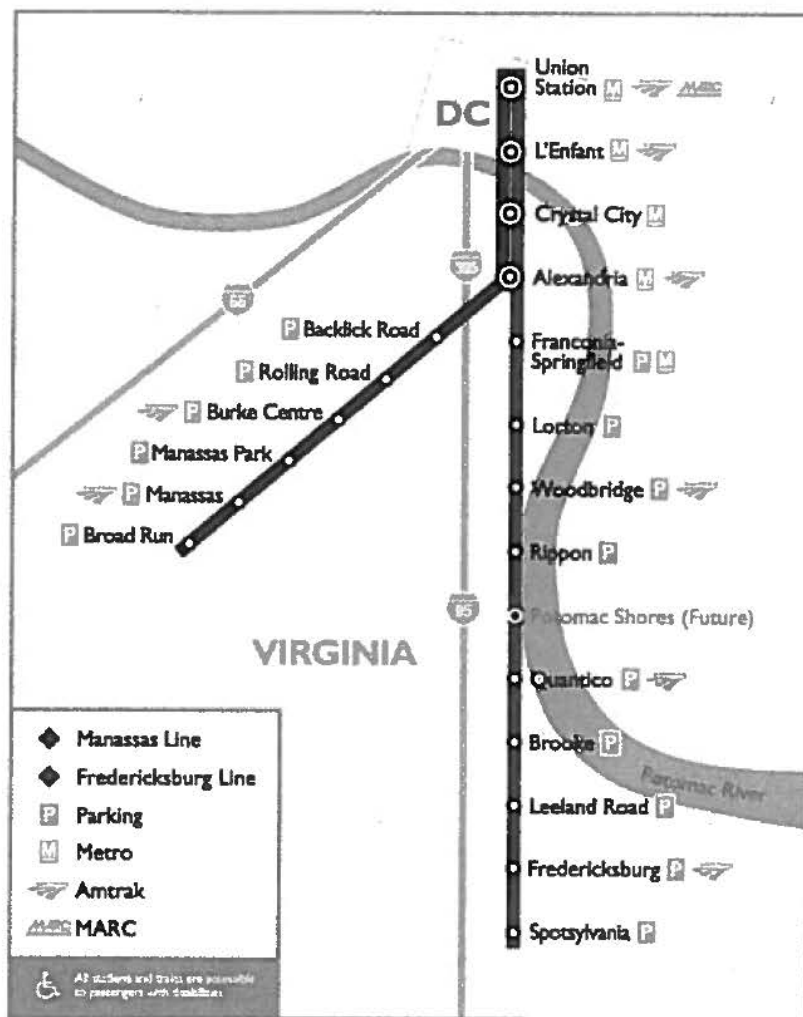
In Northern Virginia, commuter train service is provided by the Virginia Railway Express (VRE), which connects Manassas and Fredericksburg to Union Station via Alexandria and Arlington, as well as Amtrak, which is headquartered at Union Station in Washington, D.C.

VRE provides commuter rail service in Northern Virginia on its Fredericksburg and Manassas lines for over 19,000 passengers per day, providing 5 million trips in Northern Virginia in FY17.

32 daily commuter trains operate through Northern Virginia, connecting Fredericksburg and Manassas to Arlington, Alexandria, and to Washington D.C.'s Union Station, with plans to increase service with additional trains in development.

Both VRE rail lines provide peak period commuter service to/from Union Station in Washington, D.C. Both the Fredericksburg and Manassas lines also serve L'Enfant Plaza in Washington, D.C., Crystal City Metrorail Station in Arlington, and King Street Station in Alexandria, which are all transfer points from VRE to the Metrorail system. In October 2017, VRE recorded a system-wide on-time performance of 90%. In January 2018, VRE's on-time performance was 90.12% on its Fredericksburg Line and 90.18% on its Manassas Line. Customers can track VRE's daily on-time performance on its website at: https://www.vre.org/service/daily-performance/. More information on VRE is available through the following link, and a map of the system is included below.

VRE system details: https://www.vre.org/

The VRE Operations Board adopted the VRE System Plan in 2014. The plan provides a framework for VRE system investments and actions VRE should pursue through 2040 to best meet regional travel needs. The system investments and service expansion recommended in the System Plan will enable VRE to carry over 40,000 new weekday trips by 2040, more than double the 19,000 daily trips carried today.

The System Plan investments are grouped into three phases between now and 2040:

- **Phase 1, 2015-2020:** Recommends pursuing relatively low-cost investments in equipment, stations and yard storage to maximize the capacity and service currently allowed in VRE's current agreements with the CSX and NS railroads. These projects are included in VRE's FY15-20 Capital Improvement Program (CIP) and will expand system capacity to carry up to 25,000 riders per day.

- **Phase 2, 2021-2030:** Focuses on expanding VRE peak period service and introducing new services including reverse peak trains and more express trains. Major railroad investments to relieve the key capacity bottlenecks on the VRE system, including the Long Bridge crossing of the Potomac River, are identified in this phase to support the expanded VRE service. With increased Long Bridge corridor capacity, the full ridership potential of expanded service can be realized.

- **Phase 3, 2031-2040:** Contains capital projects to enable continued growth in VRE service and ridership, including completing the triple tracking of the CSX main line between Alexandria and Spotsylvania, as well as additional peak and mid-day service. The system investments included in the plan also create the opportunity for weekend service.
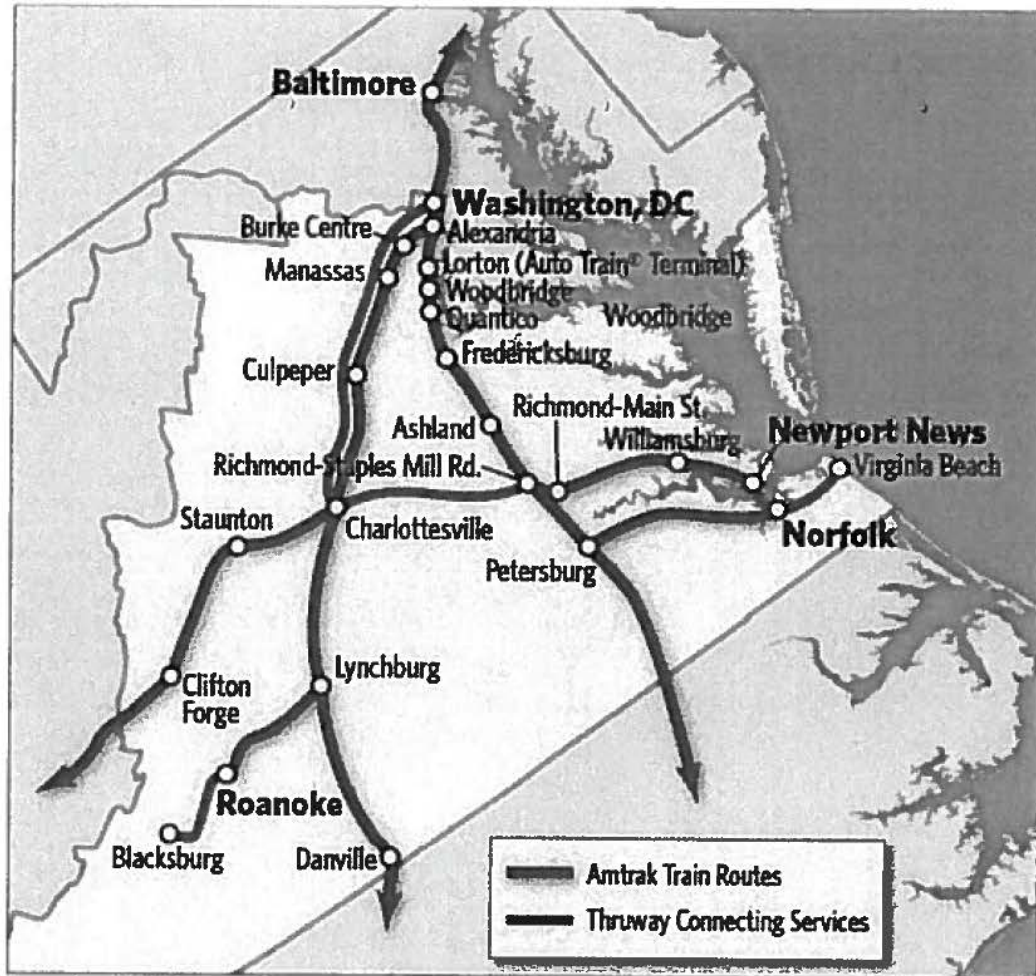
VRE System Plan 2040 Final Report:
https://www.vre.org/vre/assets/File/2040%20Sys%20Plan%20VRE%20finaltech%20memo%20combined.pdf

In addition to VRE, Amtrak service along its Northeast Corridor makes stops in Alexandria (VA), Union Station (D.C.) and New Carrollton (MD).

Amtrak passengers can transfer to the WMATA Metrorail system at all three of these Amtrak stations. Amtrak service is also available to/from the Northern Virginia communities of Burke Centre, Lorton, Manassas, Quantico, and Woodbridge. Lorton also hosts an Amtrak "Auto Train" station, where people can load their cars onto a train for transport to Florida. The Alexandria Station in Old Town serves as the largest Amtrak station in Northern Virginia, with over 40 Amtrak trains per day, and same-station transfers to both Metrorail and VRE. Within Northern Virginia, Amtrak trains effectively serve as both intercity transit and supplemental commuter rail service. The Amtrak lines also connect Charlottesville, Lynchburg, and Roanoke, VA, Atlanta, GA, New Orleans, LA, and multiple destinations in Florida to the south, Martinsburg, WV, Pittsburgh, PA, Cleveland, OH, and Chicago, IL to the west, and Baltimore, MD, Philadelphia, PA, New York City, NY and Boston, MA to the north, among others.

Amtrak service in Virginia. (source: Amtrak.com)

More information on Amtrak service in Virginia is available through the following link:
https://www.amtrak.com/virginia

Rosslyn is not directly served by VRE commuter rail services.

The nearest station is in Crystal City, which is four miles to the south. Arlington does operate high frequency one-stop express bus service to Crystal City and the VRE Station on the ART 43. Passengers can also access VRE via the Metrorail Blue Line.

Extension or new service commitment:

☒ No

Real Estate | Transportation | Ferry

F6. Ferry Service for employee commuting: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.

F6.a. Extension or new service commitment

F6.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure ferry service to Site?

F6.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Ferry service is not applicable to the Capital View site.

Real Estate | Transportation | Bus Service

F7. Bus Service: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.

F7.a. New service or extension commitment

F7.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure bus service to Site, if necessary?

F7.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Northern Virginia is served by a dense network of integrated bus systems.

More than 200 bus routes serve Northern Virginia specifically. At the regional level, Metrobus, operated by the Washington Metropolitan Area Transit Authority (WMATA), connects many locations across Northern Virginia to Washington, D.C., and parts of Maryland, with 73 routes in Virginia alone. Many of Northern Virginia's cities and counties operate their own local bus systems as well, with DASH serving 11 routes in Alexandria, Arlington Transit (ART) serving 17 routes in Arlington County, Fairfax Connector serving 88 routes in Fairfax County, and Loudoun County Transit serving 35 routes in Loudoun County.

The region offers express bus service between key destinations (such as between Dulles Airport, Rosslyn, and downtown D.C.) and Bus Rapid Transit (BRT) with dedicated bus lanes connecting Arlington and Alexandria. Together, regional bus services provided nearly 40 million rider trips in northern Virginia in FY17 (July 2016 – June 2017).

Metrobus system-wide, on-time performance (meaning the percentage of customer journeys completed on time) was 78% during the calendar quarter that ended on December 31, 2017. During the same period, Metrobus customer satisfaction was 76%.

All public bus systems in Northern Virginia use regional SmarTrip fare media, which allows seamless transfers between bus systems and the Metrorail system.

WMATA Metrobus Map, including all regional providers (Virginia): https://www.wmata.com/schedules/maps/upload/VA-System-Map-Web-version.pdf

- WMATA Metrobus – regional bus service: https://www.wmata.com/service/bus/

- Arlington Transit (ART) – local bus service: http://www.arlingtontransit.com/

- Alexandria (DASH) – local bus service: https://www.dashbus.com/welcome

- Fairfax (County) Connector – local bus service: http://www.fairfaxcounty.gov/connector/

- Fairfax (City) CUE – local bus service: http://www.fairfaxva.gov/government/public-works/transportation-division/cue-bus

- Loudoun (County) Transit – commuter bus service: https://www.loudoun.gov/bus

- PRTC - local (OmniLink) and commuter bus service (OmniRide): http://www.prtctransit.org/index.html

The Capital View Site in Rosslyn has extensive bus service including regional, local, commuter, and intercity buses, all with stops within a block of the Rosslyn Metrorail Station, making Rosslyn one of the most transit accessible locations in the Washington Metro region.

The site is served by five regional Metrobus routes. Three of these routes terminate at the Rosslyn Metrorail Station:
- 4A & 4B – Rosslyn to Fairfax County via US-50 and Pershing Drive
- 15K & 15L – Rosslyn to East Falls Church via George Washington Parkway
- 10E – Rosslyn to Alexandria via Route 110

Three more continue on to the District of Columbia:
- 3Y – Downtown Washington to Falls Church via US-29
- 5A – L'Enfant Plaza (DC) to Dulles Airport via Dulles Toll Road
- 38B – Downtown Washington to Ballston via Georgetown

Four local ART bus routes provide connections to other mixed-use districts and corridors in Arlington:
- 43 – Court House to Crystal City express (Blue Line connector bus)
- 45 – Rosslyn to Columbia Pike
- 55 – Rosslyn to Falls Church via US-29
- 61 – Rosslyn to Courthouse loop

Additionally, both Loudoun County Transit and PRTC Omniride (Prince William County) each provide two commuter bus routes that serve Rosslyn on weekdays, bringing commuters from further away areas beyond the reach of Metrorail or commuter rail. Rosslyn also has intercity bus service provided by several carriers with service to Philadelphia and New York.

To assist workers, residents, and visitors with the extensive transit options in Rosslyn, Arlington operates a commuter store within the entranceway to the Rosslyn Metrorail Station on North Moore Street. This facility provides access to all of the region's transit information (maps and schedules), trip planning services, and direct transit fare media sales.
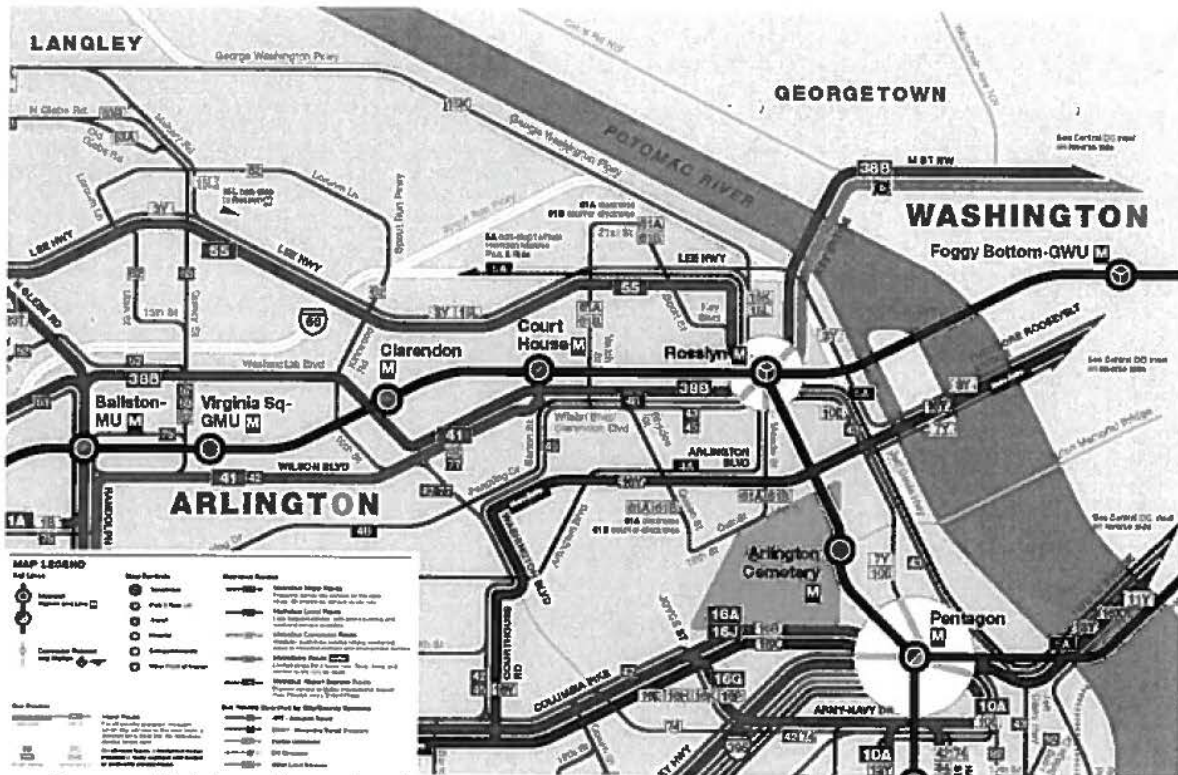
Bus and Metrorail service in the vicinity of the Capital View site (source: WMATA)

New service or extension commitment:
☒ No

Several bus systems already serve the Capital View site.

Real Estate | Transportation | Transit

F8. Master Transit Plan: please provide a copy of the Master Transit Plan encompassing Site, if any.

Planned transportation improvements for the Capital View site are found across four documents that partially comprise Arlington County's comprehensive plan.

These elements with associated dates of adoption or amendment, and links are listed below:
1. Master Transportation Plan, Goals and Policies Element (Updated February 2017):
   https://goo.gl/uCVjub
2. Master Transportation Plan, Map (Updated February 2016):
   https://goo.gl/4VJuYU
3. Master Transportation Plan, Transit Element (Updated December 2016):
   https://goo.gl/ciMjt9
4. Master Transportation Plan, Bike Element Update Website (In progress):
   https://goo.gl/4LTxqZ

The Rosslyn Sector Plan—a small-area plan—also informs future transportation planning around the Capital View site. Adopted in July 2015, this plan is available at https://goo.gl/wR8mgd

The Georgetown-Rosslyn Aerial Gondola Lift is a proposed transit system connecting the Rosslyn Metro station to Georgetown in the District.

A public-private partnership is leading the development with the goal of reducing congestion and air pollution, improving commute times and providing much better access to over two million square feet of world-class dining, fashion/apparel shopping, and some of Greater Washington's notable entertainment offerings between the two markets. Riders will enjoy a hassle-free, four-minute ride that whisks them across the Potomac River as they admire the aerial and skyline views.

The Georgetown-Rosslyn Gondola project is an idea born out of the Georgetown Business Improvement District's Georgetown 2028 15-Year Action Plan. An initial 2016 study conducted and funded by the District of Columbia Department of Transportation, Arlington County, Rosslyn Business Improvement District, Georgetown University, Gould Property Company, JBG Companies, Penzance, and Georgetown's Business Improvement District. Led by ZGF Architects, the feasibility study's objective was to identify and lay out the demand, financial, regulatory, design, and real estate considerations of an aerial gondola lift between the two commercial districts. The partners contributed in excess of $200,000 in order to launch the study, which deemed the gondola feasible.

Next steps include an environmental impact study that will also be funded by a group coalition. To date, over $500,000 has been pledged by four different entities. To finance construction and operation of the system, the project planners anticipate a public-private partnership that will include the city, state, and federal governments, as well as private organizations.

Real Estate | Local Taxes | Real Property Tax Rate
G1.a. Calculate Annual Real Property Taxes for Site

The real property tax rate is $1.006 per $100 of assessment value, which includes the base rate of $0.993 and the county-wide sanitary district rate of $0.013 for stormwater management. In addition, commercially-zoned properties in Arlington are also subject to the Transportation Capital Fund at $0.125, and the Rosslyn business improvement service district tax rate is $0.078 for a total real property tax rate of $1.209 per $100 of assessment value.

At the tax rate above and current assessed values, real property taxes for the buildings under consideration for the first phase of occupancy are approximately $5.00 per square foot. Assuming assessed values will increase due to building improvements and occupancy, using a per square foot rate of $6.00, annual real property taxes for 500,000 occupied square feet in the first phase would be approximately $3,000,000.

Real Estate | Local Taxes | Personal Property Tax Rate
G2.a. Detail any personal property exclusions

The personal property tax rate is $5.00 per $100 of assessed valuation.

Potential exclusions from business tangible personal property tax include application software and inventory for resale, some property of manufacturers, and property of a few categories of nonprofit organizations.

Real Estate | Local Taxes
G3. Detail any additional local taxes (i.e., overlay, infrastructure)

The Rosslyn business improvement service district tax rate is $0.078 for each $100 of real estate assessment value. This tax is imposed to fund additional services in the Rosslyn area. This service district tax rate is in addition to the real estate tax rate.

Real Estate | Government

H1.a. Municipal government organization and responsibilities
H1.b. County government organization and responsibilities
H1.c. State government organization and responsibilities, especially as government action may affect the Company and the headquarters.

Arlington County is a full-service, consolidated city and county government with a triple-AAA bond rating consisting of more than 3,500 full-time employees with a $749M general fund budget (FY 2018) for County operations.

The County Manager is the principal administrative officer and serves as the Chief Executive Officer (CEO) appointed by the Arlington County Board. Arlington County operates under the "County Manager Plan" form of government. Under this structure, the County Manager is responsible for carrying out the vision and policies set by the County Board and providing oversight for the day-to-day operations and management of a broad range of County programs and services.

The five-member County Board is Arlington's local governing body for general County government and is vested with its legislative powers.

Elected at-large, Board members serve staggered four-year terms with no term limits, which include an annually rotating Chair, who is the official elected County head and presides over Board meetings, and a Vice Chair, both of whom are selected by their colleagues on the Board at the annual Organizational Meeting held in early January. The Chair and Vice Chair have the same powers and duties as other Board members — a vote but no veto power.

Under the County Manager Plan form of government, the County Board appoints four positions which report directly to the Board, including the Clerk of the Board, County Attorney, County Auditor, and County Manager.

The County Board makes policy decisions that the County Manager administers (e.g., public safety, trash collection, parks and recreation, libraries, etc.); makes land use and zoning decisions within the authority granted by the Code of Virginia; sets the real estate, personal property and other tax rates; adopts the annual operating budget and bi-annual capital improvement plan; appoints community members to citizen advisory groups; and represents Arlington County on numerous regional, statewide, and national advisory groups and commissions, including the Metropolitan Washington Council of Governments, Washington Metropolitan Area Transit Authority, Northern Virginia Transportation Commission, Northern Virginia Regional Commission, Virginia Association of Counties, and National Association of Regional Councils.

For more information, see attached organizational chart of Arlington County government.

The Virginia General Assembly is the state's legislative body.

The General Assembly's lower house, the Virginia House of Delegates, consists of 100 members who are elected to two-year terms; its upper house, the Senate of Virginia, consists of 40 members with four-year terms. The Governor of the Commonwealth of Virginia is the state's chief executive, who serves a four-year term and cannot serve consecutive terms. The Governor oversees the state's executive agencies. Ralph Northam is the current Governor; he began his term in January 2018.

The Virginia Economic Development Partnership (VEDP) leads business recruitment, expansion assistance, and trade development activities at the state level, in close coordination with regional and local economic development efforts. VEDP is a quasi-independent state economic development authority governed by a 17-member board of directors that spans gubernatorial administrations. (The board of directors is comprised of Virginia businesspersons appointed by the Governor and the General Assembly.) This governance structure enables VEDP to function as a nonpartisan EDO with stable leadership, operating nimbly and creatively to encourage the expansion and diversification of the state's economy. The authority also administers many of the state's incentive programs.

In addition, Virginia has created the Major Employment and Investment Project Approval Commission (MEI Commission), vested with the authority to confidentially review and approve custom grant proposals for significant economic development projects during the site selection process. The MEI Commission is comprised of leaders from the General Assembly and executive agencies (e.g., the chairs of the House Appropriations Committee and Senate Finance Committee, as well as the Secretaries of Finance and Commerce and Trade). By considering proposed incentive packages in closed session, the MEI Commission can give prospects certainty about Virginia's incentive offering while avoiding premature public disclosure.

Real Estate | Government | Elected Officials
H2.a. County Executive(s)
H2.b. County Legislative Officers, Representatives
H2.c. Mayor or Chief Executive Officer
H2.d. Municipal Legislative Officers, Representatives

The Arlington County Board consists of five members who serve four-year terms with no term limits.

The current Board members are:
- Katie Cristol, Chair
- Christian Dorsey Vice Chair
- Erik Gutshall
- Libby Garvey
- John Vihstadt.

The County Manager, Mark Schwartz, serves as the Chief Executive Officer appointed by the elected Arlington County Board.

There are also five elected constitutional officers which include the Clerk of the Circuit Court, Treasurer, Commissioner of Revenue, Commonwealth's Attorney, and Sheriff. The Clerk of the Circuit Court is elected for an eight-year term and serves as the chief administrative officer of court operations.

The Clerk is responsible for managing and keeping records of court proceedings; collecting fines; recording and keeping land records and transfer of land ownership records such as deeds and mortgages; the custody of subdivision plats and land tract maps; the sale of marriage licenses; and administering oaths and keeping disclosure statements.

The Treasurer is elected for a four-year term and is responsible for the collection, custody, and disbursement of County funds. The Commissioner of Revenue is elected for a four-year term and is charged with assessing local taxes including the preparation of the real estate and personal property tax books and tax bills.

The Commonwealth's Attorney is elected for a four-year term and is the state's attorney for the prosecution of local criminal offenses. The Sheriff is elected for a four-year term and is responsible for the protection of the lives and property of County residents.

The Sheriff serves all warrants of arrest and summonses for witnesses and jurors, acts as bailiff at sessions of the Circuit and District Court, and supervises the county detention facility and its inmates.

I1. Describe any unique talent in the immediate area or opportunities that may not be covered in the Talent section.

Young. Smart. Progressive.

There's no mystery why independent studies consistently rank Arlington County as a top location for labor and talent. Niche placed Arlington in the No. 1 spot of Best Cities in the U.S. for Millennials. In Arlington, 36% of the population is comprised of those aged 25 to 39—among the highest percentage of any city or county in the nation.

Arlington is a perennial contender as the most educated county in the country.

More than 74% of residents 25 years and older have a bachelor's degree or higher, a nearly four % increase over the last five years. Most of this growth can be attributed to the increase in residents with graduate or professional degrees— more than 40% have been conferred master's or higher degrees.

Movoto highlighted Arlington as the best town for lesbian, gay, bisexual, transgender, and queer (LGBTQ) families.

Practices including non-discrimination laws, electing local LGBTQ leaders, and providing inclusive health benefits for county and city employers were contributors to the top ranking. In 2014, Advocate magazine included Arlington among the top 10 Gayest Cities in America. The Human Rights Campaign Fund recently named Arlington as one of only 41 "All-Star Cities" for high standards of inclusiveness and protections for LGBTQ communities.

Innovation Station

An extraordinary place for an extraordinary company

Please excuse us for saying so, but we think Innovation Station is quite special. Ideally situated in the most important growth corridor of the Washington, D.C. region, our site is the vast expanse of distinctive undulating topography — 338 acres with boundless potential for a company that specializeds in changing the world. As you will see in the pages that follow, our vision for Innovation Station is as much about culture and preservation as it is about what can be built, and we've worked hard to envision something that the employees HQ2 would truly embrace and respond to with their best work.

And, of course, this vision is set against the background of a region that's thrumming with technology talent and infrastructure, and which boasts some of the best schools in the U.S. — not to mention an exceptional wine country and sensational opportunities for lovers of the great outdoors.
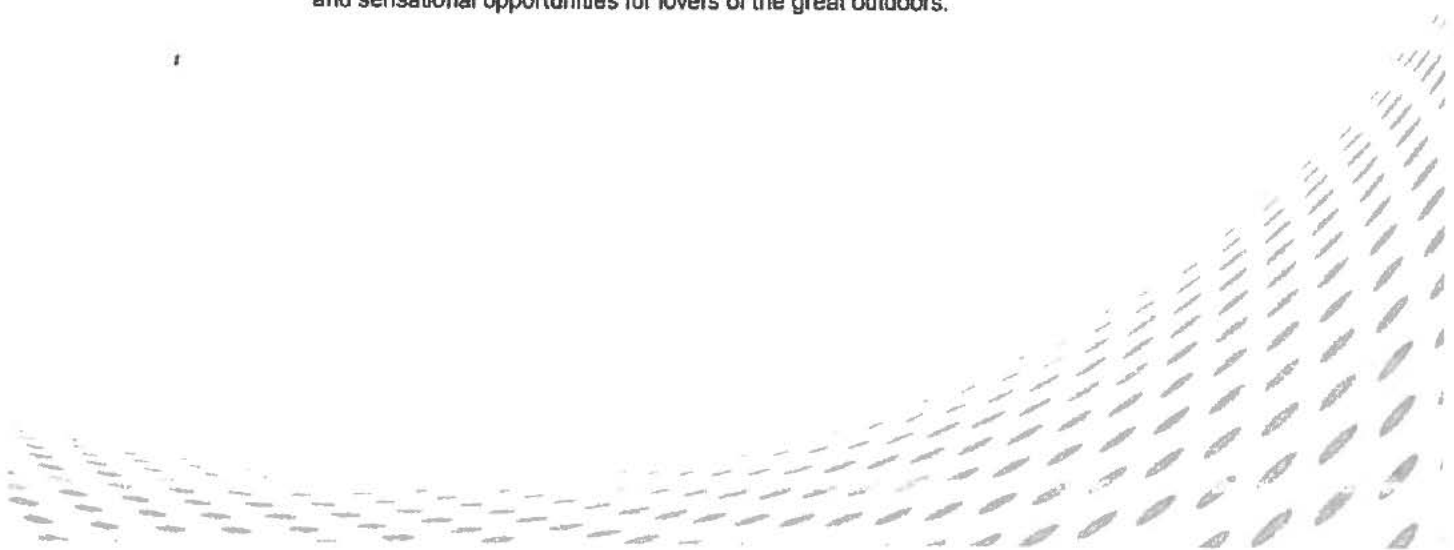
Real Estate | Site
A1. Site Name/Site Designation
A2. Street Address(es), including City, State/Commonwealth/Province and Zip/Postal Code, if available
A3. Location
A3.a. If Site is currently unincorporated, detail any plan(s) to annex Site to an incorporated municipality, as well as the benefits and burdens of any annexation. Name the intended municipality/municipalities to which Site would be annexed.
A3.b. County (Name), if applicable

Innovation Station

Location:

2214 Rock Hill Road, Herndon, VA 20170

Northeast quadrant of the Dulles Toll Road (Route 267) and Sully Road (Route 28)

Loudoun County and Fairfax County.

Real Estate | Description, Characterization

A4.a. Description – Briefly describe Site (shape, topo, etc.)
A4.b. Characterization – Indicate all that may apply:
- Brownfield
- Commercial, including Commercial Park
- Greenfield
- Industrial, including Industrial Park
- Suburban
- Technology, including Technology Park
- Urban

A4.c. Description – Briefly describe any geographic features that may limit or enhance the growth of Site (e.g., water or mountains)

Innovation Station comprises 338 acres bounded by Route 28 on the West, the Dulles Toll Road on the South, Rock Hill Rd on the East, and Route 606 on the North.

The site's topography, including natural and existing conditions, includes: gentle to moderate slopes with drainage trending southwest toward Horsepen Run watershed, moderately to densely wooded and open land, a rock quarry on the northeastern portion of the site, intermittent areas revealing diabase rock boulder formations, and a tributary of Horsepen Run that flows southwest through the western portion of the site providing a network of natural open space.

Please see Attachment 1-RE.A.4.A.-MasterPlan for the envisioned site master plan.

Characterization:
☒ Greenfield
☒ Suburban
☒ Technology, including Technology Park

Geographic features that may limit or enhance the growth of Innovation Station:
The Site contains an existing, operational rock quarry that will be shut down and converted into a quarry lake and park. The Site also includes the Horsepen Run stream valley and large boulder outcroppings that will be preserved for outdoor recreation and sustainability applications.

Real Estate | Size

A5.a. Immediate: Number of acres (either contiguous or within close enough proximity to foster a sense of place and pedestrian-friendliness) currently available for the Project's immediate operations
A5.b. Expansion: Number of acres (either contiguous or within close enough proximity to foster a sense of place and pedestrian-friendliness) available for the Project's future or expansion operation
A5.c. Schematic: Attach schematic drawing of Site.
A5.d. If less than 100 acres, is Site expandable to 100 acres?
A5.d.(i.) Detail the plan and timetable for doing so.

Innovation Station is 338 contiguous acres

There is an assemblage of parcels totaling 68 acres north of Innovation Avenue and to the southeast of the quarry along Rock Hill Road that could be incorporated into the master plan as an expansion to the proposed project. There is also a 29 acre site along Route 28 and Route 606 that would allow for seamless and contiguous expansion of the project. Finally, there is an approximately 9 acre site located immediately to the east of the site area that allows for improved connectivity and expansion along the Dulles Access Road. In total, there could be 444 contiguous acres available for the Project.

Please see Attachment 2-RE.A.5.C-ExpansionPotential.

Real Estate | Improvements

A6.a. Are there any buildings or structures or other improvements on Site (or portion of Site)?
A6.b. If Yes, describe all buildings, structures and other improvements on Site (or portion of Site), including available square footages and sustainability efforts.

Are there any buildings or structures or other improvements on Site (or portion of Site)?
☒ Yes

Innovation Station currently includes the iconic, highly visible 173,160-square-foot Center for Innovative Technology (CIT) building that is comprised of an eight-story office tower connected to a mid-rise research building. The complex features a glass enclosed atrium lobby with a 130-seat auditorium, conference center, classrooms, cafeteria, and 430 underground parking spaces. The CIT building will be enhanced and modernized, and can be retrofitted according to the Project's needs.

The master plan envisions an array of sustainability options utilizing the Site's natural elements and innovative technology to work towards a carbon-neutral setting. For more details, please see Attachment 3-RE.A.6.B-Sustainability.

Real Estate | Improvements

A7. Easements, Licenses, Rights of Way: describe each of the easements, licenses and rights of way affecting Site, and identify the beneficiaries, holders or owners of the same. If easier to show on a map, please attach to submittal and label.

Please see Attachment 4-RE.A.7-Easements.

Real Estate | Improvements

A8. Ownership: describe the ownership of Site, including the ownership structure and any entitlements.

The Site represents a joint venture between three ownership parties, with a single owner-representative. The owner-representative and master developer is Open-Rebees. The three owners and the entitlement status of the respective properties are:

I. The Innovation and Entrepreneurship Investment Authority, an affiliate of the Commonwealth of Virginia, owns 21 acres in Fairfax County and approximately 5 contiguous acres in Loudoun County ("CIT" property). Current entitlements consist of Comprehensive Plan guidance that recommends mixed-use development up to a 2.8 FAR, which could accommodate approximately 1.8 million square feet of development. Fairfax and Loudoun Counties both support amending entitlements to significantly increase the allowable FAR.

II. DWC Holdings, LLC, owns approximately 80 acres of land in Loudoun County and five contiguous acres of land in Fairfax County (DWC or The Hub property). Current entitlements include approximately 3.5 million square feet of office, 400,000 square feet of retail and entertainment, 1,265 residential units, and 350 hotel rooms with conference space and amenity space. Loudoun County and Fairfax County are prepared to modify and expand the existing entitlements.

III. Chantilly Crushed Stone, Inc. owns 228 acres of land in Loudoun County (Waterside property). It is currently entitled for 1.9 million square feet of office, 782,000 square feet of retail and entertainment, 2,595 residential units, and 375 hotel rooms with conference space and amenity space. Loudoun County is prepared to modify and expand the existing entitlements.

Real Estate | Improvements | Acquisition Costs

A9. Please describe if all or a portion of Site will be made available at no cost, or a reduced cost to the Project.
A9.a.(i). Will a government agency make Site available to the Project at no cost?
A9.a.(i). Will a government agency make Site available to the Project at no cost?
A9.a.(ii). If No, specify the per acre (and total) cost of Site to the Project?
A9.b.(i). Will a nonprofit entity make Site available to the Project at no cost?
A9.b.(ii). If No, specify the per acre (and total) cost of Site to the Project.
A9.c.(i). Will individuals or corporations or other entities make Site available to the Project at no cost?
A9.c.(ii). If No, specify the per acre (and total) cost of Site to the Project?

The 26-acre CIT property, including the existing iconic and highly-visible 173,000-square-foot CIT office building, will be contributed at no cost to the Project.

This is the property contemplated for the Project's first two million square feet of development, and it connects directly to the new Innovation Center Metro Station on the expanded Silver Line.

Public: Will a government agency make Site available to the Project at no cost?
☒ Yes

Nonprofit: Will a nonprofit entity make Site available to the Project at no cost?
☒ No: There are no nonprofit entities associated with this Project.

Private: Will individuals or corporations or other entities make Site available to the Project at no cost?
☒ No

The per acre and total cost of the Site to the Project is to be determined, and will depend on the mutually agreed upon master plan details and other factors related to development of the Project. Similarly, the estimated Base Rental Rate range for the office portions of the Project will be derived by the Landlord solving to a stabilized annual yield on the total cost of designing, permitting, and constructing the base building, including the Tenant Allowance ("Total Development Cost").

The private ownership team would like to offer a wide range of flexibility in the structuring of this relationship to support Amazon's vision. Potential paths to explore include (but are not limited to) a joint venture, a fee simple sale (one time or phased) of designated land parcels, a set of options that allows Amazon to purchase designated land parcels at future dates, or a plan to enter office leases as buildings are delivered.

Real Estate | Improvements
A10. Parking: identify all current and future parking options for Site
A10.a. Existing and Planned Retail Development near Site
A10.a.(i). Restaurants
A10.a.(ii). Cinemas
A10.a.(iii). Shopping
A10.a.(iv). Other Public Gathering Spaces (such as coffee shops and local breweries)

The existing CIT building includes 430 underground structured parking spaces. The retail village and contiguous areas of the envisioned master plan will be built over an underground parking podium tiered from one to three levels consisting of 2,400 parking spaces. Additional parking will be incorporated as integrated podium parking within individual building envelopes, street parking, and temporary surface parking. The developer will work closely with the Project to develop an appropriate transportation demand management program and a related parking program meeting target parking ratios.

Planned retail development near Innovation Station:
A planned boardwalk connecting the Project's first phase to the Silver Line Metro Station will be lined with street vendors, as will a tapestry of public spaces running throughout the Project. The heart of retail activity will be a modern retail village encompassed by the initial phases of the Project that will consist of a 40,000-square-foot international food hall, a 1,500-seat live music venue, an outdoor amphitheater, 190,000 square feet of independent restaurants and specialty retailers, and an active central park hosting open-air markets and various forms of outdoor entertainment. The retail village is scheduled for completion in 2020.

Immediately to the south of the Site is a mixed-use development under construction that will contain 499,000 square feet of office, 190 hotel rooms, over 1,000 multi-family residential units, and over 100,000 square feet of other commercial uses to include restaurants, entertainment, retail, and other consumer service uses.

Restaurants near Innovation Station:
There are over 100 restaurants within one mile of the project site offering a range of American, European, Latin, and Asian menus. Please see Attachment 5-RE.A.10-Amenities for some examples.

Cinemas near Innovation Station:
Ten theatres, including one draft house cinema, are within five to ten miles of the Project Site. Please see Attachment 5-RE.A.10-Amenities.

Shopping near Innovation Station:
The shopping in the vicinity is more than adequate, with everything an individual needs for daily goods and services, and plenty of major and minor retailers of clothing, furniture, housewares, sporting goods, jewelry, and more. There are multiple grocery stores, including a Wegmans and Costco nearby.

Other public gathering spaces near Innovation Station:
Loudoun and Fairfax Counties are quickly becoming the craft brewery capital of Northern Virginia; ten craft breweries are within an average of five miles from the Project Site. Plenty of coffee shops are also nearby. Other notable gathering spaces in the vicinity include:

- Golf course
- Seven fitness centers
- Historic Herndon Depot and Town Hall
- iFLY indoor skydiving
- Topgolf
- Claude Moore Park and Hutchison Park
- Washington and Old Dominion (W&OD) regional Class I bike path (former railroad line)

Please see Attachment 5-RE.A.10-Amenities.

Planned affordable housing near Innovation Station:

The Innovation Station masterplan is currently approved for 3,860 multifamily units but over twice as much residential density can be achieved with additional zoning entitlements. Residential product can be customized to meet the specific needs of the Project, and a rich variety of residential settings are planned for Innovation Station, including housing within the retail village and housing overlooking the 55-acre quarry lake and park. Of the 3,860 multifamily units approved onsite, 395 are proffered age-restricted, 152 are designated unmet housing needs units (i.e. low to moderate income units) and up to 243 additional affordable dwelling units can be developed. In addition, over 1,000 units of affordable apartments exist within walking distance of Innovation Station.

Existing affordable housing near Innovation Station:

Loudoun and Fairfax counties offer a wide variety of quality housing options to accommodate all price points within close proximity to the Project Site and Metrorail stations. There are approximately 1,330 apartments for rent at $2,000 or less per month, 240 homes for rent at $2,000 or less, and 300 homes for sale at $450,000 or less.

Please see Attachment 6-RE.A.11-Housing, which maps attainable and desirable housing options within five miles of the site.

One of the features that sets the Project Site apart is the intensive integration of 140 acres of greenspace and natural features, along with the dense urban built environment.

Examples include the dramatic 55-acre rock quarry lake and park, the Horsepen Run stream valley and swale activated with an outdoor amphitheater and walking trails, a high-capacity hydroponic farm, natural open space featuring wooded land and a giant boulder ridge, rolling topography, and an expansive 10-mile network of multi-modal trails, paths, and boardwalks.

Additionally, the trail network will be tied into the regionally popular W&OD Trail that runs along the historic 45-mile route of a former railroad from Shirlington to Purcellville, Virginia, and ties into hundreds of miles of bike trails in the Greater Washington, D.C. area.

Real Estate | Improvements | Plat(s)

A13. Plat(s): attach plat(s) of Site and label according to section.

Three major sections makeup the Site: The HUB (formerly known as Dulles World Center), Waterside, and the Center for Innovative Technology. Please see Attachment 7-RE.A.13-Plats.

Real Estate | Planning/Zoning | Designations

B1. Designation(s): identify Site's current planning/zoning designations(s)

The Comprehensive Plan guidance for the Site area is consistent among the local jurisdictions in that the area is envisioned for high-quality, high-intensity office and mixed-use developments that leverage the place making opportunities associated with multi-modal access to the Silver Line Metro, Dulles International Airport, Dulles Access Road, and the Route 28 Corridor.

Each Comprehensive Plan provides recommendations that allow for a mix of uses and development intensity to create an amenity rich environment that supports a live-work-play lifestyle at the Site to appeal to a broad spectrum of employees, residents, and visitors.

Planning Designations

The planning designations for the Site include Innovation Center Transit Station Area, Route 28 Core with a Mixed-Use Office Center Overlay and Route 28 Business. Both Loudoun and Fairfax Counties are updating the above planning designations to expand the development potential to allow for a greater development intensity and flexibility.

Zoning Designations

The property is comprised of several planned office, mixed-use, retail, research and development, industrial, and residential zoning districts.

Current entitlements applicable to the entire Site area allow for up to 8,412,500 square feet of non-residential uses and 3,860 residential units. In the event immediate development at the Innovation Center North Metrorail Station is desired, entitlement exists for just over 500,000 square feet of non-residential development. The Site's current FAR ranges from 0.48 to 1.45 depending on location. In addition, there is a large portion of the Site that is zoned for Town Center and has no maximum FAR.

The property consists of greenfield, existing office, and an active stone quarrying operation.

Pursuant to zoning district regulations and previously proffered development standards, a variety of uses may be developed on the property, including but not limited to office, hotel, retail, single family attached, and multifamily dwelling units.

A complete listing of the permitted (by-right) uses and permissible (special exception) uses can be found at the following zoning ordinance links:

- www.loudoun.gov/zoningordinance
- https://www.fairfaxcounty.gov/planning-zoning/zoning-ordinance.

Real Estate | Planning/Zoning | Rezoning

B4. Rezoning: must Site be rezoned for the Project's expected use?
B4.a. If Yes, outline rezoning process, including all government approvals, public hearings, and schedule. Please describe any opportunity to fast track.
B4.b. If Yes, will governments commit to rezoning prior to Site selection?

☒ Yes

Loudoun and Fairfax Counties have collaborated on both the entitlement and permitting process to create an inter-jurisdictional Amazon team dedicated to streamlining all aspects of the Site review and building permit process to ensure a consistent and efficient system with agreed upon timelines and conditions for approval.

This team has a proven track record and the full support of both county administrations and both boards of supervisors and will provide a centralized and consistent point of communication on the entirety of the project.

While the existing entitlements allow for a variety of uses, additional zoning actions would create a unified development master plan and allow for greater flexibility and development intensity to customize the various housing, amenities, and service retail needs of the Project. Each locality has the ability to condense the zoning review process through the use of a dedicated staff review team working in partnership with the Project to develop and execute a mutually agreed upon expedited entitlement schedule. The zoning process includes application acceptance (i.e. concept development plans, proffers, traffic analyses, site specific studies, and more), county / state agency staff review, community outreach, public hearings before the County Planning Commission and Board of Supervisors and legislative action by the elected body.

Loudoun and Fairfax Counties have a proven track record of fast, efficient commercial development delivery, having brought almost five million square feet of office, flex, and industrial space online in the 18 months between July 2016 and December 2017, along with more than 8,800 residential units. Amazon facilities delivered thus far in the jurisdictions are a testament to our ability to work collaboratively to reduce time to market. In addition, Loudoun has a dedicated Commercial Fast Track site plan program that averages 70 days from completed application to conditional approval.

While there is a public process legislatively required for rezoning approval, both boards of supervisors strongly support modifying current entitlements to achieve the masterplan vision.

Working with the Project's timeline, the inter-jurisdictional business assistance team will create a mutually agreed upon expedited schedule. Concurrently, the Project team has the ability to proceed with significant development under current entitlements.

Real Estate | Planning/Zoning | Neighboring Properties

B5.a. Designation(s): identify current planning/zoning designation(s) for Neighboring Properties.
B5.b. Permitted Use(s): briefly describe Neighboring Properties' permitted use(s).

The surrounding properties are currently planned and zoned for a compatible mix of uses including office, industrial, residential, and open space.

The neighboring properties allow a variety of uses that may be found in the permitted (by-right) and permissible (special exception) use tables found in the online zoning ordinances at:

- www.loudoun.gov/zoningordinance
- www.fairfaxcounty.gov/planning-zoning/zoning-ordinance

The current use of some of the neighboring properties include Dulles International Airport operations, single family dwellings, multifamily dwellings, flex-industrial uses, class-A offices, and vacant land.

Real Estate | Environment

C1. Site and Improvements (if any)

C1.a. Prior Use(s): detail prior use(s) of Site (or portion of Site) in reverse chronological order.

C1.b.(i). Detail each environmental event occurring on Site (or portion of Site) in reverse chronological order. (Environmental events include – but are not limited to – any contamination, dumping, explosion, fire, landfill or spill of any kind or description)

C1.b.(ii). Describe any environmental cleanup or remediation occurring on Site (or portion of Site) as a result of an environmental event or otherwise in reverse chronological order. Please also include any environmental studies as supplemental information.

C1.c.(i). Detail each environmental study undertaken on Site (or portion of Site) in reverse chronological order.

C1.c.(ii). Provide copies of environmental studies performed on the site within the prior three years.

Today, the property consists of an existing office building (The Center for Innovative Technology), vacant land, an active stone quarry operation (Loudoun Quarries), and a business related to the quarry operation (Virginia Paving).

The Innovation Center Station Dulles Corridor Silver Line Metrorail Extension Project located at the southeast portion of the site is currently constructing a pedestrian pavilion and related pedestrian access facilities associated with the future Silver Line Metro Station (Innovation Station). The Innovation Avenue road infrastructure was recently constructed in 2016-2018. The existing office building and associated site improvements were constructed in 1987-1988. Additional improvements and uses of the site include an existing office building, vacant land and an active stone quarrying operation. The quarry has been in operation for approximately 50 years. Prior to these uses, the property was used as farmland.

Specific Documented Environmental Events include the following:

- Removal of underground storage tank 2214 Rock Hill Road – 2018;
- Small paper fire 2214 Rock Hill Road – 2002;
- Incendiary fire at abandoned house 2209 Rock Hill Road 1999;
- Incendiary fire 2209 Rock Hill Road -1998

The existing quarry operation is regulated and permitted by the Virginia Department of Mines, Minerals and Energy (DMME).

Any environmental events related to the quarry would be documented by DMME. As part of the process to close the quarry operation, Chantilly Crushed Stone will prepare a remediation plan that will be subject to the review and approval of DMME, who will also monitor execution of that process to completion. The quarry remediation plan is detailed below:

- In 2012, Loudoun Quarries filed for a zoning change from mining operations to commercial/residential zoning which was approved in 2015. Agreement with Loudoun County through the zoning process allows the quarry to continue until the Silver Line Metro Station construction contracts are completed.

  o Currently, it is estimated that the Silver Line extension will be completed in 2020.

  o If the Loudoun Quarry location is to be converted to its approved residential/commercial use earlier, the existing contract with the Silver Line will transfer to another nearby quarry under common ownership.

- Remediation/reclamation of the quarry on the Project site will take 6-9 months under the regulatory purview of the Virginia Department of Mines, Minerals and Energy.

- Loudoun Quarries is actively receiving fill material for the future Davis Drive alignment, and this work will continue as part of the comprehensive site infrastructure, design, planning, engineering, and construction process. This earthwork can continue commensurate with a fill plan for the quarry lake.

- Loudoun Quarries has contracted SCS Engineers to develop a fill plan for the quarry lake and monitor recovery of water (Attachment 23-RE.C.B-QuarryAnalysis).

  o The analysis indicated that to fill the lake 120 feet from the current bottom with groundwater will take approximately 2.3 years. This process may be accelerated through the use of a temporary stream diversion, which may be permissible through the ACOE, surface storm runoff diversion, as well as permissible ground water pumping options.

  o Based on the preliminary groundwater recovery model, the desired full pond elevation of approximately 280 feet for the quarry lake will be achieved in approximately 5 additional years. This process could also be accelerated based upon the pace of adjacent development and capture of additional surface runoff.

- Loudoun Quarries estimates that development of the primary phase of the property could be available as soon as 1-year post quarry closure. The corresponding Loudoun County Land Development applications and permitting can be processed concurrently during this timeframe.

The following environmental studies are on record and available upon request.

Studies over the last three years as well as other key documents in bold are included as Attachment 8-RE.C.1-Environmental.

- **Zoning Map Amendment - ZMAP-2016-0006**
- **Endangered Species Report - 3/21/16**
- **Phase I Archeological Survey - 3/16**
- **Tree Survey - 2/26/16**
- **Zoning Map Amendment - ZMAP-2012-0006**
- **Tree Survey - 3/23/12**
- Endangered Species Report - 8/25/11
- Phase I Archeological Survey - 8/11
- Wetland Delineation - 8/9/11
- Jurisdictional Determination (JD# 2011-1807) - 11/1/11
- Wetland Delineation - 7/11
- Jurisdictional Determination (JD# 2006-7425) - 8/3/11
- **2010 Resource Protection Area Delineation Plan**
- Zoning Map Amendment - ZMAP-2008-0018
- Tree Survey - 8/26/08
- Endangered Species Report - 8/26/08
- **Phase I Environmental Site Assessment Update – 06/08**
- Phase I Archeological Survey - 3/07
- Wetland Delineation - 2/5/07
- Jurisdictional Determination (JD# 2007-949) - 3/13/07
- **1997 Dulles Green Floodplain Study**

There are also a few environmental permits already in place:
- The HUB property has approved wetland permits (WP4-11-0813 and 12-SPGP-01) as issued by DEQ and COE.
- Waterside property is currently processing a wetlands permit, which is in the final steps of receiving DEQ Authorization and COE permitting.

Real Estate | Environment | Neighboring Properties

C2.a. Prior Use(s): detail prior use(s) of Neighboring Properties in reverse chronological order. Please include any environmental events. Please also include any environmental studies as supplemental information.

The following Metropolitan Washington Airports Authority (MWAA) webpage provides a list of studies completed for Washington Dulles International Airport for compliance with the National Environmental Policy Act (NEPA):

http://www.mwaa.com/about/dulles-environmental-studies.

A draft Environmental Assessment has also be prepared for the Western Land Area at Washington Dulles International Airport, which can be found at **http://www.mwaa.com/about/public-notice-december-7-2017.**

Real Estate | Environment | Topography

C3.a. Elevation: identify Site's minimum and maximum topographic elevation. Please provide a topographic survey of Site, if available.
C3.b. Terrain: describe Site's terrain and Neighboring Properties' terrain:
C3.c. Wetlands: describe bodies of water, creeks, ditches, lakes, ponds, rivers and wetlands, and identify governing body or regulatory agency for each for Site and Neighboring Properties.

The Loudoun County Geographic Information System (LOGIS) five-foot and two-foot topography layers indicate that the elevation ranges from approximately 265 to 370 feet on the property as a whole.

When accounting for the quarrying and asphalt plant operations (pit and material mounds), the elevation ranges from approximately zero to 410 feet. The CIT parcels vary in elevation from approximately 360 feet at the location of the building pad to 330 feet at the eastern corner. Detailed topography is shown in Attachment 9-RE.C.3.a–Topography.

Terrain:

The topography of the Site and vicinity includes: gentle to moderate slopes with drainage trending to the southwest toward Horsepen Run, moderately to densely wooded and open land, a rock quarry on the northeastern portion of the Site, intermittent areas revealing diabase rock boulder formations, and a tributary of Horsepen Run that flows southwest through the western portion of the site (Attachment 9-RE.C.3.a–Topography).

Wetlands:

There is a tributary draining just over 640 acres to Horsepen Run, which flows southwest into Dulles Airport land. For the parcels located in Loudoun County there is a predictive wetland model for those parcels not yet delineated and verified by the Corps of Engineers. Additionally, a Resource Protection Area (RPA) plan was approved by Fairfax County in 2010, delineating waterways and wetlands, and a floodplain study approved by Fairfax County in 1997 also has waterways depicted (Attachment 8-RE.C.1-Environmental).

Real Estate | Environment | Soils types for Site and Neighboring Properties

C4.a. Testing: describe any geotechnical or other testing that has been or will be completed on Site (or portion of Site)

There are multiple soil types, slopes, and characteristics on the Site.

Please see Attachment 10-RE.C.4-Soils and Geo-Technical Reports for more information.

Geotechnical reports of subsurface testing and engineering analysis have been conducted on various portions of the site. Please see Attachment 11-RE.C.4-Geotechnical for complete copies.

Real Estate | Environment | Studies Permit(s)

C5.a. Specify all required environmental impact assessments and other environmental studies, and name relevant regulatory agency or agencies.

C5.b. Specify all required environmental permits, and name each government issuer of same. Can the environmental and building permits be integrated? Include a timetable for approvals.

The Project site benefits from having several environmental impact assessments already approved by relevant regulatory agencies.

Please see (Attachment 12-RE.C.5.A-EnviroStudies). New assessments may be required if the project scope changes and new legislative action is necessary.

All required environmental permits:

- Wetland Permits - Department of Environmental Quality/United States Army Corps of Engineers. Approval of wetland permits is at the discretion of the Corps.

- Virginia Stormwater Management Permit (VSMP) - Department of Environmental Quality. Approval of VSMP is typically within one to two weeks

- Grading Permit - Loudoun County Department of Building and Development. Approval of grading permits is within two weeks.

- Approval of above referenced permits must be accomplished prior to issuance of a building permit.

- A Land Disturbance Permit, including a local Erosion & Sediment Control plan, local Stormwater Management Plan and state Virginia Pollutant Discharge Elimination System permit is required before a building permit can be issued.

Real Estate | Environment | Studies Permit(s)

C6. Process: briefly describe the environmental study and permit processes, from preliminary discussions to final action, including any appeal periods. Also include the total costs for a building permit.

- The environmental process for legislative applications includes a Tree Survey, Endangered Species Report, and Phase I Archeology survey.

- The environmental process for site plans, construction plans, and grading permits involves a wetland delineation, jurisdictional determination, and wetland permit. Floodplain alterations are required for encroachments into the boundaries of any Floodplain Overlay Districts.

- Environmental process applications are reviewed within 30 days.

Building permit fees are calculated using fee schedules which are approved by the boards of supervisors.

Building permit fees are calculated using fee schedules approved by the boards of supervisors. The fee schedules for Fairfax and Loudoun Counties may be viewed at the following links:

- Fairfax County fee schedule:
  https://www.fairfaxcounty.gov/landdevelopment/sites/landdevelopment/files/assets/docume nts/fee-schedule_0.pdf

- Loudoun County fee schedules:
    - Building
      https://www.loudoun.gov/DocumentCenter/Home/View/17771
    - Site Development
      https://www.loudoun.gov/DocumentCenter/View/99062

Real Estate | Environment | Code(s), Regulations

C7.a. Include with your response a copy of the relevant state and local environmental code(s) and regulations. (Federal statutes and regulations need not be included with your response.)

C7.b. Are amendments to the relevant environmental code(s) and regulations pending or proposed?
   If Yes, please provide detail

Relevant code sections for Loudoun County include the following sections of the Revised 1993 Zoning Ordinance and the Loudoun County Facilities Standards Manual for development standards:

- 4-1500 Floodplain Overlay District (FOD) Regulations
- 5-1508 Steep Slope Standards
- 4-1400 Airport Impact Overlay District (AIOD)
- 4-1800 Quarry Notification Overlay District (QNOD)
- 5-1000 Scenic Creek Valley Buffer
- 5-1507 Noise Standards

https://www.loudoun.gov/zoningordinance

Additionally, a list of applicable codes and standards is available at:
https://www.fairfaxcounty.gov/landdevelopment/codes-and-standards

Are amendments to the relevant environmental code(s) and regulations pending or proposed?
☒ Yes

The Fairfax County Public Facilities Manual that provides construction design guidance for environmental infrastructure, such as stormwater management facilities, is being comprehensively updated to provide greater design flexibility.

Real Estate | Building

D1. Permits: specify all required building permits, and name government issuer of same.

All the required permits below are issued by Loudoun County Government and Fairfax County Government in compliance with Virginia State Law.

- Building/Zoning
- Demolition Permit
- Plumbing
- Mechanical including Elevators
- Electrical
- Gas
- Fire Protection Permits
- Occupancy
- Sign Permits

Other associated permits could include:

- Work within the VDOT right-of-way and new site entrances will require a permit issued by the Virginia Department of Transportation (VDOT).
- Utility Connection Permits and Fees – Loudoun Water and Fairfax Water.

Real Estate | Environment | Code(s), Regulations | Noose Restrictions

C8. Noise Restrictions: detail all noise restrictions or limitations affecting Site and any exceptions to or exemptions from same. Attach the appropriate statutory and other authorities.

Noise restrictions are in place to strike a balance between varying land uses consistent with industry standards. Modifications to noise standards are possible.

Applicable noise ordinances can be found at:

- **Loudoun County Zoning Ordinance:**
  https://www.loudoun.gov/zoningordinance

- **Fairfax County Zoning Ordinance (plus amendments):**
  https://www.fairfaxcounty.gov/planning-zoning/sites/planning-zoning/files/assets/documents/zoning/zoning%20ordinance/art07.pdf

  https://www.fairfaxcounty.gov/planning-zoning/sites/planning-zoning/files/assets/documents/zoning%20ordinance/noise%20amendment/29-15-108_1.pdf

There are additional policies in place relative to Dulles International Airport. The Site is in the LDN 60 one mile buffer of the Dulles Airport Noise Contours. LDN (loudness day-night) is the symbol for "yearly day-night noise average sound level", which means the 365 day average in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the period between 10 p.m. and 7a.m. local time.

Real Estate | Building | Process

D2.a. Briefly describe the building permit process, from pre-application discussions to final action, including any appeal periods.

D2.b. Briefly describe the estimated cost to obtain a building permit for the project. Please attach a copy of the building permit ordinance.

Loudoun and Fairfax are committed to creating an interjurisdictional review team that will follow a similar building permit review process as outlined below and illustrated in the attached flowcharts.

Please see (Attachment 13-RE.D.2-BuildProcess).

- Pre-Submission: Building plan review staff are available to hold pre-submission meetings to provide guidance and preliminary feedback prior to plan submission.

- Plan Review: **Upon submittal, plans are reviewed and comments issued within 10 workings days.** Staff is available to meet with design professionals to work collaboratively toward comment resolution.

- Permit Issuance: Permits are issued upon successful resolution of all outstanding comments.

Building permit fees are calculated using fee schedules which are approved by the boards of supervisors.

The fee schedules for Fairfax and Loudoun Counties may be viewed at the following links:

Fairfax County fee schedule:
- https://www.fairfaxcounty.gov/landdevelopment/sites/landdevelopment/files/assets/documents/fee-schedule_0.pdf

Loudoun County fee schedules:
- Building - https://www.loudoun.gov/DocumentCenter/Home/View/17771
- Site Development - https://www.loudoun.gov/DocumentCenter/View/99062

Real Estate | Building | Process | Timetable

D3. Timetable: outline the timetable for a building permit process for a project such as that proposed by the Project and include whether the community can commit to a timetable for approval.

The jurisdictions are committed to an expeditious engineering review process, including site plan review, building plan review and inspections. We recommend a process that includes the following:

- A dedicated Amazon team of reviewers, inspectors and project manager to complement and work in partnership with a dedicated customer review team.

- Use of complimentary Pre-Submission meetings.

- Use of the Counties' endorsed Engineers and Surveyors Institute Designated Plan Examiner program and Expedited Building Plan Review program to maximize submission quality and assist customer design team with compliance with local regulations and to further expedite the review process.

- Joint work sessions to be held 2 days following each submission to ensure understanding/ clarity and provide timely communication.

- Additional joint meetings to ensure understanding and clarity of review comments and customer perspective.

- Consistent 10–day or less staff review and formal comment return schedule to be implemented throughout the plan review process.

- Weekend and after-hours inspections available upon request.

Real Estate | Building | Process | Restrictions
D4. Restrictions: outline any height restrictions relevant to Site.

Current height restrictions on the Site are regulated by the zoning ordinance, the applicable approved concept plan amendments and the FAA.

Permitted heights vary from 45' to 200' based on the Loudoun and Fairfax County Zoning Ordinances. Height restrictions by ordinance allow office and residential up to 200 feet.

Height limitations are able to be modified at the time of rezoning. Additional regulations regarding height may be affected by the proximity to Dulles International Airport.

Requirements for Coordinating with the FAA and meeting their regulations are listed below.

Requirements for Coordinating with the FAA and meeting their regulations are available at the following link. The first step is to complete the Criteria Tool to determine what kind of filing is necessary and whether filing is necessary at all.

https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp?action=showNoNoticeRequiredToolForm

Air Traffic Contacts for Virginia

Position	Name	Email	Telephone
Technician	Cardenas, Debbie	debbie.cardenas@faa.gov	(817) 222-5922
Specialist	Norris, Lan	Lan.norris@faa.gov	(404) 305-6645
Crane Specialist	Norris, Lan	Lan.norris@faa.gov	(404) 305-6645

Additional information can be found on the FAA Website:
https://oeaaa.faa.gov/oeaaa/external/portal.jsp

Real Estate | Utilities

E. For each of the following utilities/services, list the name of the utility/service provider, the person assigned to work with the Project and the relevant contact information for that person.

- Water
- Wastewater
- Electricity
- Natural Gas
- Solid Waste
- Drainage/Storm Water
- Telecommunications
- Broadband

Water

Loudoun Water
Robyn Bailey
44865 Loudoun Water Way
Ashburn VA 20147
571-291-7716
RBailey@Loudounwater.org

Fairfax Water
Susan Miller
8570 Executive Park Avenue
Fairfax, VA 22031
703-289-6018
PR@fairfaxwater.org

Wastewater

Loudoun Water
Robyn Bailey
44865 Loudoun Water Way
Ashburn VA 20147
571-291-7716
RBailey@Loudounwater.org

Fairfax County Department of Public Works and Environmental Services

Shahram Mohsenin
Director, Wastewater Planning and Monitoring Division
12000 Government Center Parkway, Suite 358
Fairfax, VA 22035
703-324-5026
Shahram.Mohsenin@fairfaxcounty.gov

Electricity
Dominion Energy
William T. McCausland, Senior Economic Development Market Specialist
571-485-0647
william.t.mccausland@dom.com

Northern Virginia Electric Cooperative
Kevin Whyte
5399 Wellington Branch Drive
Gainesville, VA 20155
703-754-6773

Natural Gas
Washington Gas
Todd House
Manager, Economic Development
thouse@washgas.com
703-750-5527

Columbia Gas
Karl Brack
Senior Vice President Corporate Affairs
kbrack@nisource.com
219-647-5990

Solid Waste
Solid waste is handled privately in Fairfax, and not collected by Fairfax County.

A recycling program is required per the Public Facilities Manual. Registered solid waste collection companies can be found here:
https://www.fairfaxcounty.gov/publicworks/recycling-trash/registered-solid-waste-collection-companies

Contact information for the solid waste office in Fairfax County:

Public Works and Environmental Services, Solid Waste Management
12000 Govt Center Parkway, Suite 448
Fairfax, VA 22035-5502
703-324-5230

Loudoun has an open market waste collection program. Loudoun manages the disposal side only and can only accept waste generated in Loudoun.

Contact information for waste management in Loudoun:

Mike Fairbanks
Loudoun County General Services
703-777-0168
Mike.fairbanks@loudoun.gov

Drainage/Storm Water

Loudoun County assumes the stormwater maintenance responsibility. There are a few exceptions relative to the types of Stormwater Best Management Practices where the property owners retain maintenance responsibility. The point of contact is:

Alan Brewer
Loudoun County General Services
571-258-3444
Alan.brewer@loudoun.gov

Fairfax does not maintain privately owned Stormwater Management facilities, unless it is a dry pond in a single-family detached subdivision. SWM BMPs are detailed in private maintenance agreements between the property owner and the county. The county then inspects the facility for compliance at least once every five years in accordance with our MS4 permit. Any storm pipe in VDOT right-of-way is VDOT maintained. Storm sewers carrying "offsite" water through the site are in county easements and subject to county maintenance. If the drainage is all "private water" from within the site it is considered a private system and maintained by the owner. The Fairfax stormwater contact is:

Bruce McGranahan, P.E.
Director, Site Development and Inspections Division
Fairfax County Land Development Services
12055 Government Center Parkway, Suite 535
Fairfax, VA 22035-5500

Telecommunications

Loudoun County Broadband Services
Zenon Dragosz
Administrator of Broadband and Cable TV Services
Department of Information Technology
41975 Loudoun Center Place
Leesburg, VA 20175
703-771-5966
Zenon.dragosz@loudoun.gov

Fairfax Cable and Consumer Services
Michael Liberman
Department Director
12000 Government Center Parkway, Suite 433
Fairfax VA 22035
703-222-8435

Broadband

Loudoun County Broadband Services
Zenon Dragosz
Administrator of Broadband and Cable TV Services
Department of Information Technology
41975 Loudoun Center Place
Leesburg, VA 20175
703-771-5966
Zenon.dragosz@loudoun.gov

Fairfax Cable and Consumer Services
Michael Liberman
Department Director
12000 Government Center Parkway, Suite 433
Fairfax VA 22035
703-222-8435

Real Estate | Utilities | Cost: Water and Wastewater

E1. Water: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned.
E1.a.(i). Impact Fee
E1.a.(ii). Extension of water line(s)
E1.a.(iii). Installation of water line(s)
E1.a.(iv). Tap Fee(s)
E1.a.(v). Other relevant fees and assessments
E2. Wastewater: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned.
E2.a.(i). Impact Fee
E2.a.(ii). Extension of sewage line(s)
E2.a.(iii). Installation of sewage line(s)
E2.a.(iv). Tap Fee(s)
E2.a.(v). Other relevant fees and assessments

Service Provider: Loudoun Water provides water and sanitary service to properties in the central service area, which is to the Fairfax line per the site map provided with the email request.

Distance to Site: Please see table below.

Line Size: Please see table below.

Capacity of Line and System: Please see table below.

Capital Improvements: None currently planned for this area.

THE HUB & Waterside

Water	Response
Total water peak demand available	60 MGD system wide
Peak and volumetric daily limitations	Parcel Dependent
Site water flow pressure	Parcel Dependent
Fire water flow	2620 Total Flow (gpm)
Fire water flow pressure	60 Residual Pressure (psi)
Distance of water main to the site	Parcel dependent
Water line pipe size	8-inch to 16-inch
Redundant supply line (or loop) available	Parcel Dependent
Distance of water main to the site	Parcel Dependent

Sewer	Response
Sewer capacity available to the Site	Parcel Dependent
Back-up (redundancy for outages)	No
Sewer line pipe size (diameter)	Parcel Dependent
Distance of Sewer main to the site	On-site

- Extending water and sanitary to the site is the responsibility of the property owner.
- Loudoun Water fees and charges:
  www.loudounwater.org/developers-new-construction/pre-design.

- Plan Review Fees:
  www.loudounwater.org/developers-new-construction/review-fees
  (snip from website below)

Loudoun Water review fees are based on lengths of pipe. All submissions will be based on total length of pipe until the plan has been approved. Once the plan has been approved, if a revision to an approved plan (RAP) is submitted the fees are based on the revised lengths of pipe.

Type of Pipe	Price per Linear Foot
Water Main	$0.35
Water Service	$0.35
Sewer Main	$0.45
Sewer Lateral	$0.45
Reclaimed Main	$0.35
Reclaimed Service	$0.35

The minimum review fee for water is $250.00.

The minimum review fee for sewer is $250.00.

The minimum review fee for reclaimed water is $250.00.

- Availability Charges
www.loudounwater.org/developers-new-construction/availability-charges

  Loudoun Water assesses availability charges on all service connections. The amount of the charge is based on the demand the customer places on the system, such that each customer pays for a proportionate share of the capital infrastructure provided by Loudoun Water.

  Availability charges are based upon the size of meter needed to convey the adequate flow. For high demand customers, multi-family buildings, hotels, hospitals, and large connections, the charge may be based on an estimate of the customer's demands.

  www.loudounwater.org/developers-new-construction/central-system-water-sewer-user-rates

- Connection Charges
www.loudounwater.org/connection-charges

  Loudoun Water assesses a fee and meter charge for each connection.

- Inspection, CCTV and Record Drawing Fees:
www.loudounwater.org/developers-new-construction/inspection-cctv-record-drawing-fees
(snip from website below)

Where a Construction Permit is needed to extend or modify Loudoun Water's facilities, the applicant must pay Inspection and Record Drawing Fees to defray the cost of services provided by Loudoun Water. Rates are as follows:

Inspection Fees	Per Linear Foot	Minimum
Water main and services	$2.00	$250.00
Sewer main and laterals	$2.20	$250.00

Closed Circuit Television Inspection Fee	Per Linear Foot	Minimum
Sewer main only	$1.25	$300.00

Real Estate | Utilities | Cost: Electricity

E3. Electricity: Please provide name of service provider, distance to Site, if dual feed available, capacity of line and system (including peak usage), and any capital improvements planned.
E3.a. What is the expected proportion of renewable energy in the utility's generation mix over the next 20 years?
E3.b. What options are or will be available for the project to use up to 100% renewable energy to serve their load?
E3.c. What options are currently available to purchase power at Site on the open market?
E3.d. What is the cost per kWh?

The Site is served by two energy companies: Dominion Energy and Northern Virginia Electric Cooperative (NOVEC).

Please see (Attachment 14-RE.E.3-PowerServiceAreas).

Dominion Energy currently serves the CIT building. Electrical Service is supplied to the Site through two distinct substations feed from separate 230 KVa transmission lines, the Dulles Substation less than one mile to the south west and the Park View substation to the north east at the intersection of Davis Drive and the W&OD trail complete the loop. The redundant feed from two substations enhances the reliability of the development. Dominion can meet the demand of any potential project in this area with alternate feed options, capacity upgrades, and any specific needs.

Northern Virginia Electric Cooperative (NOVEC) provides electric service to all properties north of Innovation Avenue and west of Sully Road. NOVEC has existing electric facilities that border the perspective area described above to the west, north, and east along Shaw Road, Old Ox Road, and Rockhill Road. NOVEC has capacity available today and can provide additional capacity to the Site upon request. Additionally, NOVEC can provide a secondary (dual) feed upon request. NOVEC does not have any capital improvements planned for 2018 in area described above.

Easements for additional service are already in place in anticipation of future needs. Upgrades to the substations can be implemented through equipment renewal.

Dominion Energy has projected to increase its renewable generation to 11% by 2032. NOVEC estimates that approximately 14% of its requirements are being met by renewable energy.

Dominion's 11% renewable generation is exclusive of zero carbon nuclear assets. Dominion has an expanding renewable portfolio and could serve the load with up to 100% renewable energy.

NOVEC's portfolio is a combination of owned and contracted generation as well as wholesale market purchases. Given that a portion of NOVEC's requirements are being met through the wholesale market it stands to reason that as the market fleet evolves or its dispatch changes the portion of renewable energy contributed to the NOVEC portfolio will also change. NOVEC customers taking service under the HV-1 tariff are eligible to have their supply service met with renewable energy. NOVEC is currently working with customers that have similar supply interests and have worked in conjunction with these customers to evaluate either existing or additive renewable energy requests, firm or load shaped structures, and alternative renewable market attributes.

Energy purchasing options at the Site are market based rates and HV-1 tariffs.

Dominion offers a market based rate (MBR) that is available to customers after one year of connection to Dominion's system. The market based rate reflects the open market price of energy and is subject to market fluctuations.

In 2009, NOVEC filed and obtained approval for its HV-1 tariff. HV-1, the first of its kind in Virginia, provides customer's access to the wholesale power market for supply service. The tariff is eligible to customers that have a continuous load of 5MWs or greater and maintain a load factor of 70% or greater. The HV-1 tariff consists of a distribution service and supply service. Regarding supply, HV-1 provides customers the right to choose supply service either from the NOVEC portfolio or access to the PJM wholesale market. To date, NOVEC has worked with a number of its existing customers that elected the wholesale market to purchase their supply service.

Energy costs per kWh range from 4.5 cents to 5.5 cents.

Depending on the delivery voltage, Dominion could offer power to the customer starting in the 5.5c/kWh range. This range could vary based on load factor and customer usage which could be determined with more specific information regarding the ultimate Site layout and details.

The NOVEC distribution rate is fixed. But, by definition, the supply cost is market-based and not cost-based, so it tracks the wholesale market price of energy. In 2017, the average all in cost per kWh for a typical high load factor customer was in the range of 4.5¢ - 5.0¢/kWh for normal service; excluding taxes, fees, or any customer requested redundant service.

Real Estate | Utilities | Cost

E4. Natural Gas: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned. Include any costs to the Project.

The Site is serviced by the Washington Gas Service District with overlap of the Columbia Gas system.

Medium pressure gas lines are in service to supply the residential uses outside the southeast boundary of the property from lines extending north along Rock Hill Road.

High pressure gas transmission lines operated by Columbia NiSource Gas are located approximately 1.4 miles north of the property. The high pressure lines, with an associated take off terminal, can service the needs of the area.

Real Estate | Utilities | Telecommunication & Broadband

E5.a. Provider(s) - Name and describe providers of telecommunications (including cellular coverage) services to Site, and all high speed data links available to Site.
E5.b. Fiber maps/routes
E5.c. Estimated cost of dark fiber lease/ownership
E5.d. Is any telecommunication license required for dark fiber install or use?
E5.e. Process to install new fiber lines to reach Site

Northern Virginia has a strong market for telecommunications, broadband, and fiber connectivity services.

There are traditional players that provide capacity services (both wireline and wireless) including Verizon, AT&T, Sprint, Level 3/Centurylink, Lightower/Crown Castle, Windstream, GTT, Zayo. In addition, Northern Virginia has dark fiber services provided by SummitIG, the market leader for high count dark fiber connectivity and custom network services solutions as well as Zayo, a large national carrier, and Fiberlight.

Broadband Service Providers
Cox Communications, Inc.
703-378-8422
www.cox.com/fairfax

Verizon – FIOS Franchise Service Manager
Louise T. Anderson
703-351-3586 (Work)
571-882-0605 (Mobile)
Louise.anderson@verizon.com
1320 N. Courthouse Road, 9th Floor
Arlington, VA 22201

Fiber and telecommunications networks (17 metro and four long haul network providers)

Metro Networks
- AiNet
- Atlantech Online
- Atlantic Broadband
- Atlantic Broadband Leased
- CenturyLink Metro
- CenturyLink Metro Leased
- Fiberlight
- LIT Networks
- Level3 Metro
- Lightower Leased
- Lumos
- NOVEC
- Shentel
- Summit IG
- Sunesys
- Windstream
- Yellow Fiber
- Zayo Metro

Long Haul Networks
- Hudson Fiber LH Leased
- Summit IG Dark Long Haul
- Telia Carrier
- Windstream Long Haul

The Project Site has a very dense infrastructure of existing fiber surrounding the property on all sides.

Existing underground and overhead conduit traverses Rock Hill Road, Route 606, Route 28, Shaw Road, the Dulles Toll Road, and Toll road ramps creating a complete loop around the site. Providers such as Verizon, Shentel, Fiberlight, Espire, and Level 3 service the existing CIT building, Transportation carriers Summit IG and Level 3 have additional underground facilities in place to expand capacities. Other providers in the area include: Cox Communication, AT&T, Quest Government Services, TW Telcom, Windstream, XO, and Zayo.

Please see Attachment 15-RE.E.5.B-Fiber.

Estimated cost of dark fiber lease/ownership:
Pricing depends on the desired dark fiber solution, location of end points, service term, and service provider. Generally, dark fiber services in a ring configuration would cost between $2,000-$8,000 per month.

Is any telecommunication license required for dark fiber install or use?
In the Commonwealth of Virginia, each telecommunications provider needs to have a Certificate of Public Convenience and Necessity (CPCN) license to install and maintain telecommunications infrastructure in the public rights of way.

Process to install new fiber lines to reach Innovation Station:
At a high-level, the prospect would make an inquiry to dark fiber providers. Providers that can provide solutions meeting the prospect's requirements will respond. A deal is negotiated with the service provider(s). A contract is executed and service is delivered, implemented, and maintained based on the project schedule and prospect requirements.

Real Estate | Transportation | Air

F1.a. Nearest Airport: name, distance to Site, number of passenger carrier service providers. Also include any planned, funded and approved capital improvements to the airport.
F1.b. Detail daily scheduled service, including flights to Seattle, New York City, San Francisco/Bay Area, and Washington, D.C.
F1.c. Next nearest Airport

Dulles International Airport (1 mile)

Thirty-eight passenger carrier service providers operate through Dulles, providing 326 daily departures to 135 domestic and international locations. Daily flight schedules include an average of five flights to Seattle, 16 flights to New York City, and 12 flights to San Francisco.

Planned Improvements

- When the Metro Rail Silver Line extension is complete in 2020, the line will provide a one-seat, no transfer ride from Dulles to downtown Washington, D.C., creating long-sought after connectivity between the burgeoning Dulles corridor and the nation's capital. The Silver Line extension includes 11 new stations.

- A future fifth runway will be an east-west runway approximately 10,500 feet long and 150 feet wide. It will be parallel to existing runway 12-30 near the south side of the Airport.

DEPARTURES FROM DULLES INTERNATIONAL AIRPORT
Weekly flight schedules to select cities (based on July 2018 flight schedules)

Flights to New York City

IAD to EWR   211 Miles   ~1h 32m   6 Airlines

Airline	Flight #	Depart IAD	Arrive EWR	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	4933	6:00 AM	7:31 AM	•	•	•	•	•	•	•	
United	2250	8:15 AM	9:46 AM	•	•	•	•	•	•	•	Y
United	1811	12:32 PM	2:21 PM	•	•	•	•	•	•	•	Y
United	1972	5:20 PM	6:52 PM	•	•	•	•	•	•	•	Y
United	4965	7:14 PM	8:42 PM	•	•	•	•	•	•	•	
United	965	10:00 PM	11:29 PM	•	•	•	•	•	•	•	Y

IAD to JFK   227 Miles   ~1h 28m   22 Airlines

Airline	Flight #	Depart IAD	Arrive JFK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	4064	6:00 AM	7:28 AM	•	•	•	•	•	•	•	Y
JetBlue	1208	6:30 AM	7:44 AM	•	•	•	•	•	•	•	Y
Delta	3966	10:00 AM	11:14 AM	•	•	•	•	•	•	•	Y
JetBlue	1308	11:29 AM	12:44 PM	•	•	•	•	•	•	•	Y
Delta	3959	4:20 PM	5:53 PM	•	•	•	•	•	•	•	Y
JetBlue	1808	8:27 PM	9:59 PM	•	•	•	•	•	•	•	Y

IAD to LGA   228 miles   ~1h 17m   4 Airlines

Airline	Flight #	Depart IAD	Arrive LGA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	6255	8:15 AM	9:31 AM	•	•	•	•	•	•	•	Y
United	6055	12:35 PM	1:49 PM	•	•	•	•	•	•	•	Y
United	6334	5:08 PM	6:25 PM	•	•	•	•	•	•	•	Y
United	6337	10:05 PM	11:22 PM	•	•	•	•	•	•	•	Y

Flights to Seattle

IAD to SEA   2,298 miles   ~5h 55m   11 Airlines

Airline	Flight #	Depart IAD	Arrive SEA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	1838	7:05 AM	9:55 AM	•	•	•	•	•	•	•	
United	389	8:36 AM	11:07 AM	•	•	•	•	•	•	•	Y
Alaska Airlines	859	9:20 AM	12:15 PM	•	•	•	•	•	•	•	
United	357	12:36 PM	3:15 PM	•	•	•	•	•	•	•	
United	326	5:37 PM	8:12 PM	•	•	•	•	•	•	•	Y

Flights to San Francisco

IAD to SFO   2,412 miles   ~5h 52m   14 Airlines

Airline	Flight #	Depart IAD	Arrive SFO	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Alaska Airlines	1069	6:20 AM	9:05 AM	•	•	•	•	•	•	•	Y
United	1881	6:48 AM	9:40 AM	•	•	•	•	•	•	•	Y
United	424	8:18 AM	11:10 AM	•	•	•	•	•	•	•	Y
United	1763	9:15 AM	12:07 PM	•	•	•	•	•	•	•	Y
Alaska Airlines	1071	9:50 AM	12:30 PM	•	•	•	•	•	•	•	Y
United	525	12:40 PM	3:30 PM	•	•	•	•	•	•	•	Y
United	560	3:47 PM	6:24 PM	•	•	•	•	•	•	•	Y
United	340	5:16 PM	8:11 PM	•	•	•	•	•	•	•	Y
Alaska Airlines	1077	6:30 PM	9:25 PM	•	•	•	•	•	•	•	Y
United	1893	7:01 PM	9:55 PM	•	•	•	•	•	•	•	Y
United	2274	7:54 PM	10:39 PM	•	•	•	•	•	•	•	Y
United	225	10:00 PM	1:01 AM	•	•	•	•	•	•	•	Y

Next nearest airports include:
- Leesburg Executive Airport: 13 miles to site
- Manassas Executive Airport: 27 miles to site
- Reagan National: 29 miles to site
- Baltimore-Washington International: 58 miles to site

Real Estate | Transportation | Roads

F2. Roads: describe road access to Site and any planned improvements. Include details of how employees may commute into Site via personal auto or rideshare. Use specific highway names, road names, bridges, etc.

Amazon employees will have many options for their daily commute.

Please see Attachment 16-RE.F-Commuting.

Specific details on different modes of travel and corresponding routes are detailed below.

Commute by car

The Site is located prominently at the northeast quadrant of the interchange with Dulles Toll Road (Route 267) and Sully Road (Route 28). Both roadways are classified as Freeways/Expressways. The combined Dulles Toll Road and Dulles Greenway provide direct access from the site to central Loudoun County to the west and Reston, Tysons, Arlington, and the District of Columbia to the east. Route 28 provides direct access to Chantilly, Centreville, Prince William County, and Manassas to the south.

The Site, which has excellent connections to Loudoun and Fairfax Counties, is just east of the Washington Dulles International Airport and is easily and directly accessible from Innovation Avenue (a four-lane divided roadway) via the Route 28/Innovation Avenue interchange located immediately north of the Route 267/Route 28 interchange. The Site can also be accessed from Rock Hill Road (a two-lane road) via Old Ox Road (Route 606). Route 606 provides connectivity to Route 28 to the west via an interchange, and Herndon Parkway to the east, which provides additional access to Route 267.

Commute by bike

Fewer than two miles from the site is the Washington & Old Dominion (W&OD) Trail, which is a 45-mile regional trail, that connections Purcellville in Loudoun County to Shirlington in Arlington County runs through places such as the Towns of Leesburg and Vienna, the City of Falls Church, Herndon, and Reston. The trail can be accessed via Shaw Road, future Davis Drive, Oakgrove Road, and Rock Hill Road (all north of Route 606) in Loudoun County, as well as via Herndon Parkway in Fairfax County. The trails connect to the Custis Trail in Arlington County, which then connects to pedestrian and bicycle facilities across the Potomac River to Washington, D.C. and Maryland.

Commute by Ride-Share

The Fairfax County Commuter Services (FCCS) program offers free assistance to residents and employees to promote alternatives to drive-alone commuting. FCCS also conducts onsite assessments to assist in developing customized commute program and incentive packages, as well as hosts employee fairs and workshops, and carpool/vanpool formation meetings at major employment sites. The Loudoun County Commuter Services (LCCS) program focuses on education and awareness of transportation options such as carpooling, vanpooling, and other commuting options. LCCS staff regularly follows up with employers to ensure services are successful and provides additional support if needed. The program also has an employer outreach component that implements Transportation Demand Management (TDM) programs in employment sites. Both FCCS and LCCS support regional promotions such as Try Transit Week, Car Free Day, and Bike to Work Day.

Planned Road Improvements

Numerous roadway connections are being planned to further improve the access to the Site and the nearby Innovation Center Metrorail Station. One of those key planned connections is the Davis Drive Extension/Sunrise Valley Drive Overpass, located just west of the Innovation Center Metrorail Station. This project will provide a new bridge between Fairfax County and Loudoun County over the Dulles Corridor by connecting Sunrise Valley Drive in Fairfax County to Innovation Avenue in Loudoun County. The new bridge and road is planned for four travel lanes, on-road bike lanes, a sidewalk on one side, and a shared-use path on the other side of the roadway. For more details on the bridge and other local site specific transportation improvements, please see Attachment 17-RE.F.2-AccessImprovements.

Planned Multimodal Improvements

13 funded multimodal projects are being implemented around the Site to improve pedestrian, vehicle, and bicycle connections to and from the new Silver Line Metrorail stations as part of Fairfax County's Herndon Area Metrorail Station Access Improvement (HMSAMS) projects. Loudoun County is also providing bicycle and pedestrian connections along all planned roadways proximate to the Innovation Station site. Furthermore, to take advantage of the growing popularity of Capital Bikeshare in the region, 15 stations have been provided in Reston, with the funding to provide another 16 locations by 2019. There is an additional $1 million in funding to provide 11 more stations into the Herndon and Innovation Station areas by 2020.

List of Road and Multimodal Projects

ID	Road Project	Description
1	Davis Drive Extension/Sunrise Valley Drive Overpass	Sunrise Valley Drive to Innovation Avenue
2	Extend and widen Davis Drive	4 lanes, Innovation Avenue to Sterling Boulevard
3	Extend and widen Shaw Road	4 lanes, Innovation Avenue to Sterling Boulevard
4	Widen Innovation Avenue	4 to 6 lanes, Route 28 to Dulles Green Boulevard
5	Widen Old Ox Road Route 606	6 lanes, Dulles Greenway to Rock Hill Road
6	Extend Pacific Boulevard	6 lanes, Route 606 to Innovation Avenue
7	Widen Route 28	10 lanes, I-66 to Route 606
8	Widen Route 28	6 to 8 lanes, Route 50 to McLearen Rd northbound
9	Widen Route 28	6 to 8 lanes, Route 606 to Route 7
10	Widen Dulles Greenway	8 lanes, Leesburg Bypass to Dulles Toll Road
11	Widen Dulles Toll Road	6 lanes, Dulles Toll Greenway to Fairfax County line
12	Rock Hill Road Upgrade	Enhanced 2 lane road and add sidewalk
13	Widen Sunrise Valley Drive	4 lanes, Sayward Boulevard to Dulles Station Boulevard
14	Widen Sunrise Valley Drive	Add bike lanes, Sayward Boulevard to Frying Pan Road
15	Widen Centreville Road	4 to 6 lanes, Sunrise Valley Drive to Town of Herndon
16	Widen or improve Coppermine Road	2 to 4 lanes, Sunrise Valley Drive to Centreville Road
17	Widen Frying Pan Road	2 or 4 to 6 Lanes, Route 28 to Centreville Road
18	River Birch Road Extension	4 lanes, Frying Pan Road to Sunrise Valley Drive
19	McNair Farms Drive Extension	Sunrise Valley Drive to Centreville Road

ID	Pedestrian/Bicycle Project	Description
20	Sunrise Valley Drive/Monroe Street	Upgrade signalized crosswalks at all approaches
21	Van Buren Street/Worldgate Drive	Install signalized crosswalks
22	Herndon Parkway/Herndon Metro Entrance North	Install mid-block signalized crosswalk
23	Dulles Toll Road/Monroe Street Crossing	Study to construct a shared use path and pedestrian bridge
24	Dulles Toll Road/Centreville Road	Install new pedestrian improvements
25	Chandon Park to Worldgate Drive	Install shared-use path and lighting
26	Crossing on Trails South of Innovation Center Metro	Improve fair-weather crossing to pedestrian bridge.
27	Rock Hill Road to Innovation Center Metrorail Station	Construct 10-foot wide sidewalk on east side of road
28	Van Buren Street from W&OD to Monroe St Bridge	Study to upgrade road with bike lanes and sidewalks
29	Monroe Street -Dulles Toll Road to West Ox Road	Construct shared use path
30	Sunrise Valley Drive Bike Lanes	Construct bike lanes from Innovation Station to Fairfax County Parkway
31	Neighborhood Trail -North Side Innovation Station	Add shared-use path and lighting
32	Innovation Center to Arrowbrook Development	Construct trail from Arrowbrook Development to Sunrise Valley Drive

Regional Overview

Northern Virginia is the nexus of several major interstates, I-66 (east-west), I-95 (north-south), I-395 (connecting through DC), and I-495 (a beltway around the region). A comprehensive set of High Occupancy Toll (HOT) Express Lanes along I-66, I-95, I-495, and coming soon to I-395, offer more efficient freeway travel for passengers headed into or out of the region.

Northern Virginia strives to make commuting faster, safer, and more efficient for vehicles traveling on the region's roads. A robust High-Occupancy Vehicle (HOV) lane network provides dedicated road lanes for cars with multiple riders per vehicle during peak hours, and over 90 miles of tolled Express lanes serve drivers willing to pay for less traffic on their trip. Together, these facilities result in faster travel on our regional interstates.

In addition, the region nurtures strong vanpool and carpool communities. One example is Vanpool Alliance, a statewide initiative to increase the number of vanpools operating and vanpool occupancy through funding for both new vanpools and existing vanpools undergoing changes in ridership. This support comes in the form of up to $400 per van per month. In addition, Northern Virginia has promoted a dynamic carpooling culture ("slug culture") on I-95—and increasingly, I-66—for over 40 years, with 6,570 daily "slugs" (self-initiated casual carpooling for commuting) in the I-95 corridor alone. CarpoolNow, a free, metro-area carpooling app, uses incentives to encourage carpooling throughout the region. Northern Virginia is also home to active transportation network companies such as Uber and Lyft.

Virginia's park-and-ride lots enhance all aspects of Northern Virginia's transportation system. These parking lots allow commuters, particularly long-distance commuters, to park their vehicles at a convenient location and then finish their commute using other transportation modes, such as carpool, vanpool, bus, train, bicycle, and walk. Northern Virginia features more than 110 park-and-ride lots containing a total of 57,000 parking spaces, with additional spaces being added.

Roadway operations in Northern Virginia use advanced Intelligent Transportation Systems and Integrated Corridor Management initiatives; dynamic speed limits and pricing, ramp metering, reversible and peak-hour lane reconfigurations, real-time multimodal trip time displays, transit signal priority, and more.

Real Estate | Transportation | Tram or Light Rail

F3. Tram or Light Rail: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F3.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure tram or light rail service to Site?
F3.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Within the 338-acre site, the master plan has the ability to incorporate tram, light rail, electric shuttle, or other innovative intra-site transportation options.

The Commonwealth of Virginia, Fairfax County and Loudoun County are willing to explore all transportation options that enhance modal choice getting to, from and around the Project Site.

Commit to acquire right-of-way to assure tram or light rail service to Site?
☒ No

While there is no letter of commitment specific to light rail and/or tram services at this time, the Incentives Section provides flexible funding options that can be committed to transportation enhancements.

In addition, the regional Metrorail system serving the Greater Washington area will stop at the front doorstep to the Site once the Silver Line extension is completed in 2020. All access and right-of-way dedications are already in place for this major transportation enhancement.

Real Estate | Transportation | Metro or Subway

F4. Metro or Subway: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F4.a. Extension or new service commitment
F4.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure metro service to Site?
F4.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

The Washington Metropolitan Area Transit Authority (WMATA) operates Metrorail, which serves northern Virginia, Washington, D.C., and parts of Maryland.

Metrorail carries between 600,000 and 700,000 riders per day and is historically the second most ridden metro system in the United States, behind only New York's subway.

Metrorail consists of approximately 118 route miles, 91 passenger stations, and a fleet of over 1,100 railcars. Of Metrorail's six lines, four of them - Silver, Orange, Blue, and Yellow - serve northern Virginia. The Site will be served by a new Metrorail station on the Silver Line opening in 2020. Please see Attachment 18-RE.F.4-Metrorail for a map of Metrorail's lines and stations.

Metrorail operates 5:00 am to 11:30 pm Monday through Thursday, 5:00 am to 1:00 am on Friday, 7:00 am to 1:00 am on Saturday, and 8:00 am to 11:00 pm on Sunday. Throughout most of the day, Metrorail trains arrive on individual lines in Virginia every eight minutes, with double or triple service (every three to four minutes) where multiple lines run together on the same track. During off-peak times, trains arrive on individual lines every 12-20 minutes, with double or triple service on multiple-line segments. Metrorail fares vary by time of day and the distance between stations. The base Metrorail fare is $2.25 and the maximum one-way fare is $6.00.

Planned Improvements

The $2.8 billion extension of the Metrorail Silver Line from Reston to Dulles Airport and Ashburn in Loudoun County is under construction (Attachment 18-RE.F.4-Metrorail). The project is approximately 70% complete and includes a station at the Project Site. When the Innovation Metrorail Station opens there will be complimentary facilities in addition to the Metrorail. The south side of the station will have a 2,072-space park and ride garage, 27 short-term parking spaces, four bus bays, and bicycle amenities. The north side of the station will 10 short-term parking spaces and four bus bays. Pedestrian bridges will be constructed on both the north and south sides of the Dulles Toll Road to access the station. These bridges, which will connect to each other, will facilitate pedestrian and bicycle access across the Dulles Toll Road.

Reliability

Thanks to Metrorail's fully exclusive right-of-way, Metrorail trains generally enjoy speed and reliability significantly greater than surface transit systems such as light rail or bus rapid transit. Although a maintenance backlog negatively affected reliability in recent years, WMATA's recent "SafeTrack" and "Back2Good" initiatives, coupled with delivery of nearly 500 new railcars, have considerably improved reliability since 2016.

Between 2008 and 2015, Metrorail had 20 "major vehicle failures" (failures preventing vehicle movement) per million vehicle revenue miles and 1.7 "other vehicle failures" per million vehicle revenue miles—the sixth and third lowest rates, respectively, among major metro/subway systems (Source: Washington Post 2016). From October to December 2017, Metrorail system wide on-time performance was 87%. During the time period covering July 2017 to December 2017, on-time performance by Metrorail line in Virginia was 88% on the Blue Line, 89% on the Orange Line, 89% on the Silver Line and 93% on the Yellow Line. In addition to high on-time performance, rail fleet reliability (i.e., rail mean distance between delays) has increased by 25% over the last six months (ending December 2017) from 69,466 miles to 87,225 miles (source: WMATA Vital Signs Report for October-December 2017).

To bolster rail customer service satisfaction, WMATA recently introduced its "Rush Hour Promise" that automatically refunds fares to customers if a rush hour trip on Metro is delayed by 15 minutes or more.

Metro's recent improvements have been driven by the largest-ever annual capital investment in the system. The record setting $1.16 billion in capital funding spent in FY17, including $700 million in federal grant reimbursements, led to improved track infrastructure, railcar reliability, and escalator performance. Efforts to provide an additional $500 million per year are advancing in Virginia, Maryland, and Washington, D.C.

Extension or new service commitment
☒ Yes

Please see Attachment 19-RE.F.4.A-MetroMOU. The agreement stipulates funding will come from US DOT, Virginia, Fairfax, Loudoun, WMATA, and MWAA.

Real Estate | Transportation | Commuter Train

F5. Commuter Train Service: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F5.a. Extension or new service commitment
F5.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure rail service to Site?
F5.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Northern Virginia is served by both Amtrak, which is headquartered at Union Station in Washington, D.C., and the Virginia Railway Express (VRE), which connects Manassas and Fredericksburg to Union Station via Alexandria and Arlington (Attachment 20-RE.F.5-RegionalRail).

The Manassas and Burke Centre stations are less than 30 minutes from the Site. The Burke Centre station has free surface and garage parking for 1,504 vehicles.

VRE provides commuter rail service in northern Virginia on its Fredericksburg and Manassas Lines for approximately 19,000 passengers per day. Both VRE rail lines provide peak period commuter service to/from Union Station in Washington, D.C. Both VRE rail lines also serve L'Enfant Plaza in Washington, D.C., Crystal City Metrorail Station in Arlington, and King Street Station in Alexandria, which are all transfer points from VRE to the Metrorail system. In October 2017, VRE recorded a system wide on-time performance of 90%. The Manassas Line had 90% on-time performance, while the Fredericksburg line had 91% on-time performance. VRE is planning to invest and expand to accommodate 40,000 new weekday trips by 2040, more than double the 19,000 daily trips carried today.

In addition to VRE, Amtrak service along its Northeast Corridor makes stops in Alexandria (VA), Union Station (D.C.), and New Carrollton (MD). Amtrak passengers can transfer to the WMATA Metrorail system at all three of these Amtrak stations. Within Northern Virginia, Amtrak trains effectively serves as both intercity transit and supplemental commuter rail service. The Amtrak lines also connect Charlottesville, Lynchburg, and Roanoke, VA, Atlanta, GA, New Orleans, LA, and multiple destinations in Florida to the south, Martinsburg, WV, Pittsburgh, PA, Cleveland, OH, and Chicago, IL to the west, and Baltimore, MD, Philadelphia, PA, New York City, NY, and Boston, MA to the north, among others (Attachment 20-RE.F.5-RegionalRail).

Commit to acquire right-of-way to assure rail service to Site?
☒ Yes

The Commonwealth of Virginia, Fairfax County and Loudoun County are willing to explore all transportation options that enhance modal choice getting to, from and around the Project Site. The Incentives Section provides flexible funding options that can be committed to transportation enhancements.

In addition, the regional Metrorail system serving the Greater Washington area is primarily a Commuter Train, and will stop at the front doorstep to the Site once the Silver Line extension is completed in 2020. All access and right-of-way dedications are already in place for this major transportation enhancement. Please see Attachment 19-RE.F.4.A-MetroMOU. The agreement stipulates funding will come from US DOT, Virginia, Fairfax, Loudoun, WMATA, and MWAA

Real Estate | Transportation | Ferry

F6. Ferry Service for employee commuting: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.

F6.a. Extension or new service commitment

F6.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure ferry service to Site?

F6.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

White's Ferry, located in Loudoun County, provides ferry service across the Potomac River to Poolesville in Montgomery County, MD.

The service is less than 30 minutes from the Site. The Ferry can hold up to 24 vehicles and operates daily from 5:00 am to 11:00 pm. There are no plans, at this time, to expand the ferry service.

Commit to acquire right-of-way to assure ferry service to Site?
☒ No

F7. Bus Service: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F7.a. New service or extension commitment
F7.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure bus service to Site, if necessary?
F7.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Fairfax Connector and Loudoun County Transit are fixed-route bus systems.

The Connector, with a fleet of nearly 300 buses, operates primarily within Fairfax County but also provides service to major destinations outside the County such as the Pentagon and U.S. State Department. Loudoun County Transit, with a fleet of over 100 buses, also provides service within Loudoun County to major commuter and employment destinations as well as elsewhere in Northern Virginia and Washington, D.C. The Fairfax Connector and Loudoun County Transit systems are owned by their respective local governments with the Connector managed by the Fairfax County Department of Transportation and Loudoun County Transit managed by the Department of Transportation and Capital Infrastructure. Within the fixed-route designation, there are multiple service types offered, such as local bus and express bus, to meet the needs of business, residents, and riders.

The Site is located within the north service area of the Fairfax Connector system. In the north service area, Fairfax Connector serves the Route 28 and Dulles Toll Road corridors as well as the employment centers in Reston, Herndon, and Tysons. Loudoun County Transit provides two distinct services around the Site. Local buses provide service to passengers internal to Loudoun County and Metro Connection buses provide peak period service from multiple park and ride lots throughout Loudoun County to the West Falls Church and Wiehle-Reston East Metrorail Stations (Attachment 21-RE.F.7-Bus).

Fairfax Connector and Loudoun County Transit provides amenities and accommodations that facilitate easier access to their bus systems for a variety of passengers such as the disabled, pedestrians, and bicyclists.

All Loudoun County Transit and Fairfax Connector vehicles are fully compliant with the Americans with Disabilities Act (ADA). The Fairfax Connector and Loudoun County Transit buses are equipped with ADA ramps, as well as bicycle racks.

Fairfax Connector and Loudoun County Transit are working to extend the reach of multimodal travel to employment and other activity centers. Considerable investments are being made in multi-level parking structures and secure bike room storage at Metro stations. In 2020, a package of service changes will be implemented to improve connectivity from the surrounding communities.

Both Fairfax County and Loudoun County have planned enhancements in transit service which include route restructuring and level of service adjustments in hours of operations and headways.

To increase connectivity throughout Loudoun County, Loudoun County Transit is shifting the spine of its current service from the Route 7 Corridor to the Route 267 (Dulles Greenway / Dulles Toll Road) Corridor. This investment will create major transit hubs at three new Metrorail Stations (Innovation Center, Loudoun Gateway, and Ashburn) by providing direct and convenient connections to major employment and activity centers. Furthermore, if the Innovation Center site is selected for the new headquarters, Fairfax Connector will implement a temporary fixed limited stop route serving the north side of the Innovation Center Metrorail station and the north side of the Wiehle-Reston Metrorail station via Route 28, and the Dulles Toll Road; which will provide rail to bus connections to emerging Innovation activity centers. This new route will directly serve the Project site with service seven days a week until the Metrorail Silver Line opens in 2020.

The Fairfax Connector and Loudoun County Transit have invested Computer Aided Dispatch and Automated Vehicle Location (CAD/AVL) technology. The Intelligent Transportation Systems (ITS) are designed to provide greater information to riders, thereby reducing wait times. Loudoun County Transit has the ITS technologies on its Metro Connections fleet and is in the process of updating its local bus fleet.

Commit to acquire right-of-way to assure bus service to Site, if necessary?
☒ No

Real Estate | Transportation | Transit

F8. Master Transit Plan: please provide a copy of the Master Transit Plan encompassing Site, if any.

- Fairfax County TDP: https://www.fairfaxcounty.gov/transportation/tdp
- Loudoun County TDP: https://www.loudoun.gov/index.aspx?NID=2540

Real Property Tax Rate

The real property tax rate in Loudoun County is $1.125 per $100 of assessed value, and in Fairfax County is $1.13 per $100 of assessed value.

Calculate Annual Real Property Taxes for Site

In Tax Year 2017, the annual real property taxes for all parcels that make up the Site totaled $1.8 million (Fairfax parcels = $464,000, Loudoun parcels =$1.37 million). Detailed analysis for each parcel included in the proposed Site can be found in Attachment 22-RE.G.1-RealPropertyTaxes.

Real Estate | Local Taxes | Personal Property Tax Rate
G2.a. Detail any personal property exclusions

Most classifications for personal property are taxed at $4.20 per $100 of assessed value, with an aggressive drop from tax assessment factors of 50% in year one to 90% less than purchase price after five or more years.

Loudoun Personal Property Depreciation Schedule

Years Since Purchase	Percentage of Original Cost
1	50%
2	40%
3	30%
4	20%
5 & prior	10%

The tax rate for most personal property in Fairfax County is $4.57 per $100 of assessed value. This rate has not changed since 1988. Taxes on business tangible property (except vehicles) are not prorated. If the business personal property is not in the county as of January 1, no taxes are owed for that year. If the property is disposed during the year, then tax is still owed for the entire year. Business personal property (except vehicles) is depreciated based on the age of the property. The percentages from the depreciation schedule, shown below, are applied to the original purchase price of the property to determine its tax basis.

Personal Property Depreciation Schedule		
Year of Acquisition	Computer Equipment	Other Business Property
1	50%	80%
2	35%	70%
3	20%	60%
4	10%	50%
5	2%	40%
6	2%	30%
7 or more	2%	20%

Personal property exclusions:
Loudoun County has reduced personal property tax rates on some types of equipment generally associated with science, research and development, and aerospace business activities.

Fairfax County exempts household goods and personal effects from the personal property tax. One vehicle owned by an active duty military or their spouse is exempt from taxation. Government owned, diplomat owned, military owned, and daily rental cars may not be subject to the personal property tax. A subclass of vehicles is taxed at a reduced personal property tax rate of $0.01 per $100 of assessed value. The subclass includes but is not limited to vehicles for disabled and privately-owned vans used for a van pool.

In addition, Virginia offers an exemption from the sales and use tax for computer equipment bought or leased between July 1, 2010 and June 30, 2035 for use in a data center. To qualify for this exemption, the facility must be located in Virginia, generate a capital investment of at least $150 million and create at least 50 new jobs that pay one and one half times the prevailing average wage in the locality.

Real Estate | Local Taxes
G3. Detail any additional local taxes (i.e., overlay, infrastructure)

The following additional local taxes were incorporated into the calculations for Tax Year 2017 listed above.

Jurisdiction	Tax	Rate per $100 assessed value
Fairfax	2017 Pest Infestation Rate	$0.0010
Fairfax/Loudoun	2017 Dulles Rail Phase II Transportation Improvement Rate	$0.2000
Fairfax	2017 Stormwater Management Rate	$0.0300
Loudoun	Route 28 Tax Rate	$0.1800
Fairfax	2017 Commercial and Industrial Transportation Rate	$0.1250

Real Estate | Government

H1.a. Municipal government organization and responsibilities
H1.b. County government organization and responsibilities
H1.c. State government organization and responsibilities, especially as government action may affect the Company and the headquarters.

Loudoun County

Loudoun County has seven towns: Hamilton, Hillsboro, Leesburg, Lovettsville, Middleburg, Purcellville, and Round Hill. Though potential employees may reside in these towns, the purposed Site does not fall under the jurisdiction of any of these towns and is, therefore, subject only to the policies of the County.

Loudoun County's towns are generally structured under a Council-Manager form of government. This means that a town council and mayor are elected and are then responsible for appointing a town manager/administrator. Town councils may also appoint other civil staff including, but not limited to, committees, clerks, and police department chiefs. Towns may take any combination of municipal responsibilities including: zoning, utilities, water and sewage, garbage collection and recycling, parks and recreation, and fire and safety. The County provides any services not under the jurisdiction of the towns.

The County often partners with towns on a variety of initiatives and looks to collaborate to provide better service to residents.

Fairfax County

Most of the area within Fairfax County is unincorporated, but there are three incorporated towns within the county: Herndon, Vienna, and Clifton. Innovation Station has a Herndon address, but it is split between unincorporated areas of Fairfax and Loudoun counties and does not fall under the jurisdiction of the Town of Herndon.

Fairfax County's towns are structured under a council-manager form of government. This means that a town council and mayor are elected and are then responsible for appointing a professional, non-political town manager or administrator. Town councils may also appoint staff including, but not limited to, committees, clerks, and police department chiefs. Towns may take any combination of municipal responsibilities including: planning and zoning, utilities, water and sewage, garbage collection and recycling, parks and recreation, and fire and safety. Because the towns are an integral part of the county structure, the county government provides any services that the towns do not provide.

While surrounded by the county, the City of Fairfax is an independent entity under Virginia law, with ordinances and governance.

County government organization and responsibilities:

Loudoun County

Loudoun County is governed by a nine-member Board of Supervisors. The chairman of the Board of Supervisors is elected by the voters at large. The other supervisors are elected from each of eight election districts in the county: Ashburn, Algonkian, Blue Ridge, Broad Run, Catoctin, Dulles, Leesburg, and Sterling. All nine members serve concurrent terms of four years.

The Board of Supervisors sets county policies, adopts ordinances, appropriates funds, approves land rezonings and special exceptions to the zoning ordinance, and carries out other responsibilities set forth by the State Code.

The Board is responsible for appointing a county administrator that acts as the chief executive for the county government and oversees all administrative matters not under the purview of Loudoun's constitutional officers. These services include general government administration; public safety and judicial administration; parks, recreation, and culture; community development; and health and welfare. This primary functions encompass everything from building schools and wastewater infrastructure to checking out library books to residents to qualifying residents for Medicaid. See the organizational chart below for a more comprehensive break out of Loudoun County's government functions.

It's worth noting that Loudoun County's economic development is housed as a department under the county administrator and is not a separate authority. Additionally, Loudoun County's Building and Development Department centralizes oversight of all phases of construction within Loudoun County.

There are some traditional government functions that are not directly housed under Loudoun County's government. Loudoun Water, which oversees water distribution and wastewater management for 75,000 Loudoun households, is a subdivision of the State and not housed under Loudoun County government as a department. Loudoun Water is governed by a Board consisting of nine members appointed by Loudoun County's Board of Supervisors. Loudoun County's tourism function, an organization called Visit Loudoun, is also housed outside of county government.

In addition to the Board of Supervisors, residents of Loudoun County elect at large five constitutional officers including the: sheriff, treasurer, commissioner of revenue, clerk of the circuit court, and commonwealth's attorney. Residents of Loudoun also elect the Board of Education. The Board of Education mirrors the Board of Supervisor with one member elected at large and one member elected by each of the county's eight election districts.

Loudoun has a centralized, annual budget process. Constitutional officers, Loudoun County Public Schools, and other departments work with the County Administrator to develop a comprehensive budget created under guidance from and adopted by the Board of Supervisors.

The Town of Leesburg has served as the County seat for over 200 years and houses Loudoun County Government Center, though County facilities are located throughout the County.

ORGANIZATIONAL CHART

```
                          ┌──────────────┐
                          │   Loudoun    │
                          │   County     │
                          │  Residents   │
                          └──────────────┘

┌──────────────┐   ┌──────────────┐   ┌──────────────┐   ┌──────────────┐
│ School Board │   │   Board of   │   │ Court System │   │ Commissioner │
│              │   │  Supervisors │   │              │   │of the Revenue│
└──────────────┘   └──────────────┘   └──────────────┘   └──────────────┘

┌──────────────┐   ┌──────────────┐
│ Commonwealth │   │    County    │                       ┌──────────────┐
│   Attorney   │   │   Attorney   │                       │   Treasurer  │
└──────────────┘   └──────────────┘   ┌──────────────┐    └──────────────┘
                                      │    County    │
                                      │ Administrator│
┌──────────────┐                      └──────────────┘    ┌──────────────┐
│  Clerk to the│                                          │    Sheriff   │
│ Circuit Court│                                          │              │
└──────────────┘                                          └──────────────┘
```

Community Development	General Government	Health & Welfare	Parks, Recreation & Culture	Public Safety & Judicial Administration
- Building & Development - Economic Development - Mapping & Geographic Information - Planning & Zoning - Transportation & Capital Infrastructure	- Elections & Voter Registration - Finance & Procurement - General Services - Human Resources - Information Technology - Management & Budget	- Extension Services - Family Services - Health Services - Mental Health, Substance Abuse & Developmental Services*	- Library Services** - Parks, Recreation & Community Services	- Animal Services - Community Corrections - Courts - Fire & Rescue - Juvenile Court Service Unit

Source: FY 2018 Adopted Budget, E-4

Fairfax County

Founded in 1742, Fairfax County is governed by a 10-member Board of Supervisors. The chairman of the Board of Supervisors is elected by the voters at large. The other supervisors are elected from each of nine election districts in the county: Braddock, Dranesville, Hunter Mill, Lee, Mason, Mount Vernon, Providence, Springfield, and Sully. All 10 members serve concurrent terms of four years.

The Board of Supervisors sets county policies, adopts ordinances, appropriates funds, approves land rezoning requests and special exceptions to the zoning ordinance, and carries out other responsibilities set forth by the Code of Virginia.

The Board is responsible for appointing a county executive, whose office acts as the administrative arm of the county government not under the purview of the county's three constitutional officers. Services include general government administration; public safety and emergency services; land development services and public works; libraries and community development services; and health and human services.

There are several administrative functions that are carried out by semi-autonomous authorities, which are listed below. All of the authorities have board members appointed by the Board of Supervisors.

- The Economic Development Authority, which oversees economic development activities designed to generate commercial tax revenue that the Board of Supervisors uses to fund high-quality public services.

- The Park Authority, which cares for 23,000 acres of public parkland and the activities on it.

- The Housing Authority, which manages affordable homes for 20,000 residents of Fairfax County, and assists disabled and senior members of our community.

- Fairfax Water, which is responsible for acquisition, construction, operation, and maintenance of an integrated water system in Fairfax County. Fairfax Water also provides water serves neighboring Alexandria and Prince William County.

Fairfax County's tourism function, an organization called Visit Fairfax, is also housed outside of county government.

In addition to the Board of Supervisors, residents of Fairfax County elect at-large three "constitutional officers": the sheriff, who runs the county courthouse; the clerk of the circuit court, who oversees the judicial system for Fairfax County and the City of Fairfax; and the commonwealth's attorney, who prosecutes criminal, civil and traffic matters for the county and the city.

Fairfax County residents also elect a 12-member School Board. Nine of these members are chosen from a supervisor district and three are elected at-large. A chairman is chosen from within the group annually.

Fairfax County has a centralized, annual budget process. The county executive works with county department and authority heads and the constitutional officers to craft an annual budget proposal that is considered by the Board of Supervisors. The Board of Supervisors also approves an annual amount of funds to transfer to the Fairfax County Public Schools, which operates under an annual budget crafted by the Schools Superintendent and approved by the School Board.

The Fairfax County Government Center, hub of county administrative activities, is located in the Fairfax area of the county. The county operates government centers that contain offices for the nine members of the Board of Supervisors who represent individual districts. The Fairfax County Courthouse, site of almost all judicial activities, is contained within the City of Fairfax. Fairfax County Public Schools is based in the Merrifield area of the county.

See below for more detail about the organization of the Fairfax County government.

Organization of Fairfax County Government
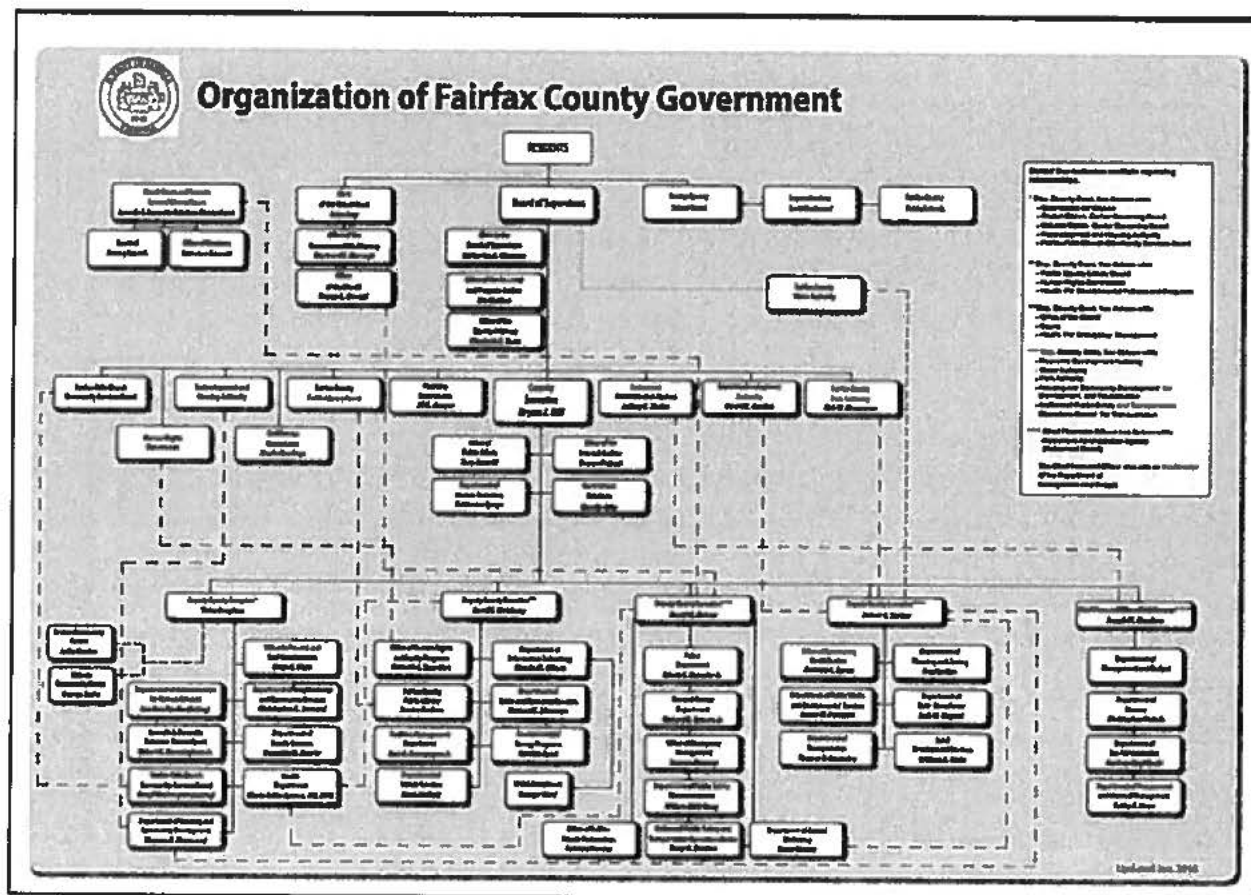
State government organization and responsibilities:
The Virginia General Assembly is the state's legislative body. The General Assembly's lower house, the Virginia House of Delegates, consists of 100 members who are elected to two-year terms; its upper house, the Senate of Virginia, consists of 40 members with four-year terms. The Governor of the Commonwealth of Virginia is the state's chief executive, who serves a four-year term and cannot serve consecutive terms. The Governor oversees the state's executive agencies. Ralph Northam is the current Governor; he began his term in January 2018.

The Virginia Economic Development Partnership (VEDP) leads business recruitment, expansion assistance, and trade development activities at the state level, in close coordination with regional and local economic development efforts. VEDP is a quasi-independent state economic development authority governed by a 17-member board of directors that spans gubernatorial administrations. (The board of directors is comprised of Virginia businesspersons appointed by the Governor and the General Assembly.) This governance structure enables VEDP to function as a nonpartisan EDO with stable leadership, operating nimbly and creatively to encourage the expansion and diversification of the state's economy. The authority also administers many of the state's incentive programs.

In addition, Virginia has created the Major Employment and Investment Project Approval Commission (MEI Commission), vested with the authority to confidentially review and approve custom grant proposals for significant economic development projects during the site selection process. The MEI Commission is comprised of leaders from the General Assembly and executive agencies (e.g., the chairs of the House Appropriations Committee and Senate Finance Committee, as well as the Secretaries of Finance and Commerce and Trade). By considering proposed incentive packages in closed session, the MEI Commission can give prospects certainty about Virginia's incentive offering while avoiding premature public disclosure.

Real Estate | Government | Elected Officials

H2.a. County Executive(s)
H2.b. County Legislative Officers, Representatives
H2.c. Mayor or Chief Executive Officer
H2.d. Municipal Legislative Officers, Representatives

Loudoun County and Fairfax County operate with a county board of nine supervisors and five constitutional officers, all elected by popular vote in four or eight-year cycles. The county government is then operated by a county administrator who is hired by the board.

Loudoun County Board of Supervisors
- Phyllis J. Randall, Chair
- Ralph M. Buona, Vice Chair, Ashburn District
- Suzanne M. Volpe, Algonkian District
- Tony R. Buffington Jr., Blue Ridge District
- Ron A. Meyer, Broad Run District
- Geary M. Higgins, Catoctin District
- Matthew F. Letourneau, Dulles District
- Kristen C. Umstattd, Leesburg District
- Koran T. Saines, Sterling District
  Term Limits: Four years

Fairfax County Board of Supervisors
- Sharon Bulova, chairman
- Penelope A. Gross, vice chairman, Mason District
- John C. Cook, Braddock District
- John W. Foust, Dranesville District
- Pat Herrity, Springfield District
- Catherine M. Hudgins, Hunter Mill District
- Jeff C. McKay, Lee District
- Kathy L. Smith, Sully District
- Linda Q. Smyth, Providence District
- Daniel G. Storck, Mount Vernon District
  Term Limits: Four years

Loudoun County Legislative Officers, Representatives
- **Clerk of the Circuit Court Gary Clemens**
  Term Limit: Eight years
- **Sheriff Mike Chapman**
  Term Limit: Four years
- **Commissioner of the Revenue Bob Wertz**
  Term Limit: Four years
- **Commonwealth's Attorney Jim Plowman**
  Term Limit: Four years
- **Treasurer Roger Zurn**
  Term Limit: Four years

Fairfax County Legislative Officers, Representatives
- **Clerk of the Circuit Court John Frey**
  Term Limit: Four years
- **Commonwealth's Attorney Ray Morrogh**
  Term Limit: Four years
- **Sheriff Stacey Kincaid**
  Term Limit: Four years

Loudoun County Mayor or Chief Executive Officer
- **County Administrator Tim Hemstreet** (appointed)
  Term Limit: N/A

Fairfax County Mayor or Chief Executive Officer
- **County Executive Bryan Hill** (appointed)
  Term Limit: N/A

Municipal Legislative Officers, Representatives
N/A

Amazon's future workforce is being trained in top-notch science and technology programs in Northern Virginia's world-renowned universities and technical schools.

There are more than 750,000 workers in the region employed in STEM fields. The business ecosystem Amazon needs for their second headquarters is thriving in Northern Virginia. Tech companies chose this region for its business-first environment; well-educated talent, location that affords easy access to national and global markets, priority focus on innovation, and record-setting growth. Employees and citizens in our region have been rated the happiest and healthiest in the nation. Our financial growth and workforce productivity have exceeded all expectations, and we are confident that Amazon will share in that success.

National Landing

National Landing offers Amazon the rare combination of massive growth potential in an existing vibrant, transit-rich, urban place.

Located in the "heart" of the Washington, D.C. are adjacent to Reagan National Airport, alongside the Potomac River.

One Community, One Owner, Infinite Options for HQ2.

In the center of the country's most educated market, overlooking our nation's capital — surrounded by top talent, government customers, tremendous infrastructure, and a spectacular quality of life.

This is a canvas of limitless possibilities to propel Amazon's future.
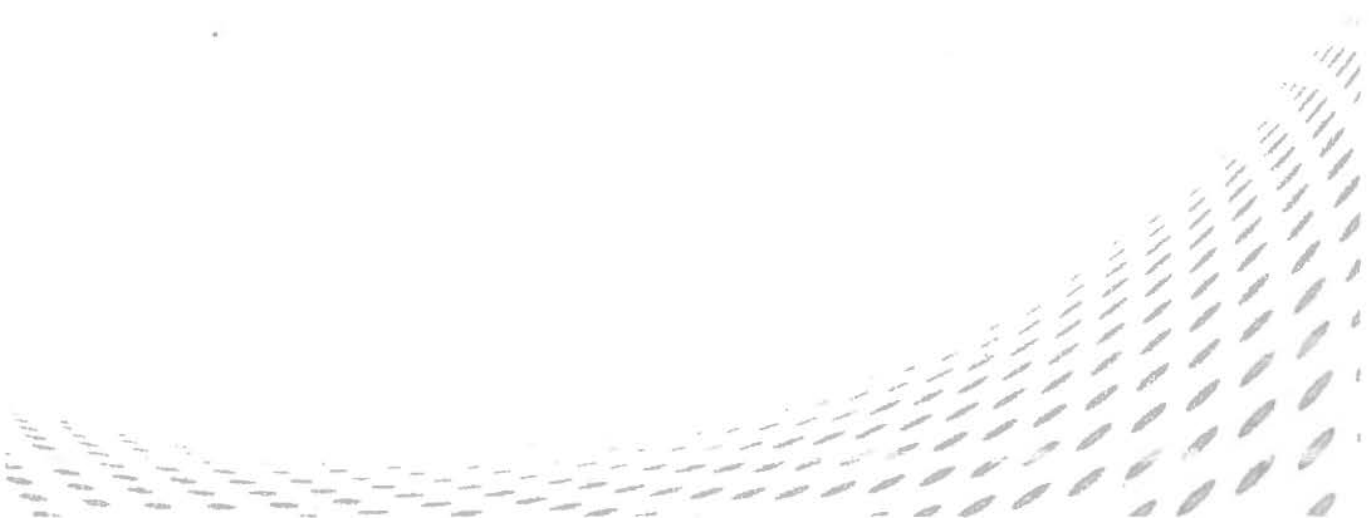
Real Estate | Site

A1. Site Name/Site Designation
A2. Street Address(es), including City, State/Commonwealth/Province and Zip/Postal Code, if available
A3. Location
A3.a. If Site is currently unincorporated, detail any plan(s) to annex Site to an incorporated municipality, as well as the benefits and burdens of any annexation. Name the intended municipality/municipalities to which Site would be annexed.
A3.b. County (Name), if applicable

National Landing- a site presented by Arlington County and the City of Alexandria controlled by a Single Real Estate Partner-JBG SMITH (NYSE: JBGS)

Immediate Occupancy Bldgs:

JBG SMITH owns multiple buildings that could accommodate the immediate requirement. The below buildings represent those assets with vacancy available by 2019, subject to the timing of partner selection. All the buildings are in Arlington, Virginia 22202.

National Landing - January 2019 Occupancy Opportunities - Central and North Districts

Building Name	Building Size (Square Feet)	Full or Partial Building	Contiguous Square Feet Available	Lead Time	JBG SMITH Ownership*
1750 Crystal Drive	270,000	Full Building	270,000	6 months	100%
1800 South Bell	201,068	Full Building	201,068	Move-in Ready	100%
223 23rd Street	155,854	Full Building	155,854	6 months	100%
1851 South Bell	390,767	Full Building	390,767	9 months	100%
Metropolitan 6, 7 & 8	130,000	Full Building	130,000	9 months	100%
Full Building Subtotal	1,147,689		1,147,689		
241 18th Street	361,193	Partial Building	116,571	Move-in Ready	100%
2200 Crystal Drive	280,097	Partial Building	102,238	Move-in Ready	100%
1225 South Clark Street	283,812	Partial Building	116,461	Move-in Ready	100%
2451 Crystal Drive	402,172	Partial Building	69,744	Move-in Ready	100%
2345 Crystal Drive	507,336	Partial Building	58,344	Move-in Ready	100%
Partial Building Subtotal	1,834,610		463,358		
2019 Occupancy Total	2,982,299		1,611,047		

* JBG SMITH can modify/relocate leases as needed to accommodate Amazon's 2019 occupancy needs

A partnership more than 20 years in the making, Arlington County and the City of Alexandria are excited to have teamed up to offer Amazon the ideal real estate opportunity that straddles thriving and progressive communities.

Both communities have worked together for years to build transportation infrastructure and linkages to allow residents and employees to easily traverse between destinations. Our development staff have worked together on planning issues to thoughtfully coordinate and ensure that our mixed-use community is activated, complete with an abundance of amenities and community services. Our leadership is in full support of the joint incentives offered for this site and are agnostic to the development path chosen by Amazon. We are all ready for Amazon's HQ2 to touch down in National Landing!

Real Estate | Description, Characterization
A4.a. Description – Briefly describe Site (shape, topo, etc.)
A4.b. Characterization – Indicate all that may apply:
- Brownfield
- Commercial, including Commercial Park
- Greenfield
- Industrial, including Industrial Park
- Suburban
- Technology, including Technology Park
- Urban

A4.c. Description – Briefly describe any geographic features that may limit or enhance the growth of Site (e.g., water or mountains)

National Landing consists of three Districts—North, Central, and South—located in Arlington County and the City of Alexandria, Virginia.

The Site is embedded in the existing urban fabric and totals approximately 285 acres bordered to the east by the George Washington Parkway, Ronald Reagan Washington National Airport (DCA), and the Potomac River. (see Real Estate A.5.c. Schematic - National Landing.pdf)

In addition to more than 7,000,000 square feet of existing office, residential, retail, and hotel buildings owned by JBG SMITH, National Landing is entitled or approved for more than 20,000,000 square feet of new, additional, mixed-use development, providing a unique, large-scale opportunity with a single owner, JBG SMITH, in the dense urban core of the Washington, D.C. metro area.

The City of Alexandria and Arlington County have worked over the last decade to develop National Landing as a comprehensive district. Much of the open space, infrastructure, transit, and roadways are seamlessly tied together and are already in place.

- National Landing's North District, located in Arlington County, comprises approximately 95 acres situated between the Pentagon and the George Washington Parkway. The North District already features more than 2,000,000 square feet of existing office and residential buildings and still offers plenty of available land parcels. The North District also has existing utilities, streets, and transit networks to support considerable additional density.
  - The North District has two unique, urban infill land opportunities, upon which more than 4,000,000 square feet, as entitled, and up to 6,000,000 square feet within the federal (FAA) height limits can be developed. These parcels are unencumbered and can provide unparalleled campus opportunities with views and access to the core of the Washington, D.C. region at significant scale.

- National Landing's Central District, also located in Arlington County, is approximately 110 acres situated just west of Ronald Reagan Washington National Airport and the George Washington Parkway. The Central District today is improved with existing office and residential buildings, street, and transit networks, and is bordered to the west by Route 1.
  - The Central District currently has more than 20 existing office, apartment, and hotel buildings totaling more than 5,000,000 square feet, all owned by JBG SMITH. There are additional buildings within the area as well. The Central District is approved for significant additional density which can be accommodated within building envelopes and consistent with the Sector Plan.
    - There are four immediately available parcels totaling approximately 2,500,000 square feet of new development HQ2 office space opportunities. Additional HQ2 parcels totaling approximately 5,000,000 square feet of density - these are also available by redeveloping existing, small, older buildings.

- National Landing's South District, located in the City of Alexandria, comprises approximately 80 acres situated along the Potomac River and George Washington Parkway east of Route 1. The South District today primarily consists of existing single story, leased retail spaces and surface parking, with multi-family residential buildings and office buildings at the southern end along with vacant land parcels. The South District also has existing utilities, streets, and transit networks.
  - The South District is approved and entitled for more than 9,000,000 square feet of additional mixed-use development adjacent to an approved Metro Station *(naming available)* along Route 1 and including the region's first bus rapid transit corridor that runs throughout National Landing.
  - 675,000 square feet (owned by JBG SMITH) is available for near term occupancy, with the remaining density available for future build-to-suit opportunities.

Characterization:
☒ **Urban**

Geographic features that may limit or enhance the growth of Site (e.g., water or mountains):
- The Site is approved for additional height and density in all Districts, allowing for significant growth within its current boundaries.

- National Landing can accommodate growth of more than 20,000,000 square feet of already approved and zoned density. Additional density could be achieved through a zoning process, but the following site limits will likely remain constant:

  - The Site is located immediately to the west of the Potomac River, the George Washington Parkway, a National Park Site, and Ronald Reagan National Airport (DCA). While Reagan National Airport is not currently zoned or planned for additional density, the surface and structured parking lots, and other non-flight related real estate could potentially accommodate more than 15,000,000 square feet of additional long-term development within federal (FAA) height limits. As a long-term big idea, Reagan National Airport parking lots and underutilized support structures could potentially be an interesting opportunity for additional ecosystem enhancements.

  - Neighboring properties to the west primarily consist of similar uses, allowing potential additional growth of the urban, mixed-use environment permitted in National Landing.

Real Estate | Size

A5.a. Immediate: Number of acres (either contiguous or within close enough proximity to foster a sense of place and pedestrian-friendliness) currently available for the Project's immediate operations

A5.b. Expansion: Number of acres (either contiguous or within close enough proximity to foster a sense of place and pedestrian-friendliness) available for the Project's future or expansion operation

A5.c. Schematic: Attach schematic drawing of Site.

A5.d. If less than 100 acres, is Site expandable to 100 acres?

A5.d.(i) Detail the plan and timetable for doing so.

JBG Smith can provide numerous options for a January 1, 2019 occupancy date, both in full buildings and as partial building occupancies with contiguous space.

National Landing - January 2019 Occupancy Opportunities - Central and North Districts

Building Name	Building Size (Square Feet)	Full or Partial Building	Contiguous Square Feet Available	Lead Time	JBG SMITH Ownership*
1750 Crystal Drive	270,000	Full Building	270,000	6 months	100%
1800 South Bell	201,068	Full Building	201,068	Move-in Ready	100%
223 23rd Street	155,854	Full Building	155,854	6 months	100%
1851 South Bell	390,767	Full Building	390,767	9 months	100%
Metropolitan 6, 7 & 8	130,000	Full Building	130,000	9 months	100%
Full Building Subtotal	1,147,689		1,147,689		
241 18th Street	361,193	Partial Building	116,571	Move-in Ready	100%
2200 Crystal Drive	280,097	Partial Building	102,238	Move-in Ready	100%
1225 South Clark Street	283,812	Partial Building	116,461	Move-in Ready	100%
2451 Crystal Drive	402,172	Partial Building	69,744	Move-in Ready	100%
2345 Crystal Drive	507,336	Partial Building	58,344	Move-in Ready	100%
Partial Building Subtotal	1,834,610		463,358		
2019 Occupancy Total	2,982,299		1,611,047		

* JBG SMITH can modify/relocate leases as needed to accommodate Amazon's 2019 occupancy needs

All of the above buildings are located within a short walk to a Metrorail station and bus rapid transit stop, a regional rail station, and DCA airport pedestrian and bicycle access paths. Please see the attached map exhibit (NL January 2019 Occupancy Opportunities) which shows the location of the buildings within National Landing and also indicates if the building is a full or partial building occupancy opportunity.

- This year JBG SMITH will start a new project on the same block as 1750 Crystal Drive and 241 18th Street to deliver an additional 120,000 square feet of retail to the Central District, including a new nine-screen Alamo Drafthouse Cinema, a 16,000-square-foot neighborhood grocery store,

and 35,000 square feet of additional restaurants and neighborhood retail. This new retail is in addition to more than 400,000 square feet of already existing retail located in the Central District.

- In the next several years, a new 45,000-square-foot (~1 acre) urban park will be constructed along 18th Street in the Central District in conjunction with Arlington County. The majority of the existing office buildings are also located immediately west of park space that accesses the running and biking trails on the George Washington Parkway along the Potomac River. Arlington County will also be constructing a new aquatics center in the adjacent Long Bridge Park at this time.

Number of acres available for the Project's future or expansion operations:

As previously mentioned, National Landing consists of three Districts—North, Central and South—located in Arlington County and the City of Alexandria, Virginia, totaling approximately 285 acres (including the Immediate Site of five acres). The Site is bordered by the George Washington Parkway, Reagan National Airport, Route 1, and the Potomac River. It has an existing city block structure, parks, retail, street, and transit networks. The total linear distance of National Landing is approximately two miles.

In each of the Districts, there is significant acreage to expand depending on the development path Amazon chooses:

- The North District is in Arlington County and is approximately 95 acres located south of the Pentagon.
- The Central District is in Arlington County and is approximately 110 acres located immediately west of Reagan National Airport and the George Washington Parkway.
- The South District is in the City of Alexandria and is approximately 80 acres located along the Potomac River and George Washington Parkway east of Route 1.

District	Land Area	Entitled Density (SF)*
North District	95 acres	4,000,000
Central District	110 acres	7,500,000
South District	80 acres	9,000,000
Total Density	**285 acres**	**20,500,000**

* This density does not include demolition of significantly leased office buildings, which can occur over time. The increased density with that level of redevelopment is represented in a later chart.

- National Landing's proximity, access to park space, and urban nature are all visible on the attached schematic. The current Site contains more than 1,000,000 square feet of retail, much of which will be redeveloped and returned in the ground floor of new buildings on the Site. There is an additional 1,000,000 square feet of retail within walking distance that will remain throughout the development of National Landing. Repositioning retail in the Central District (185,000 square feet owned by JBG SMITH) is the primary focus of JBG SMITH's near-term development plans. Redeveloping existing retail in the South District to accommodate future density will occur as existing leases roll and higher-density development replaces current low-rise retail uses.
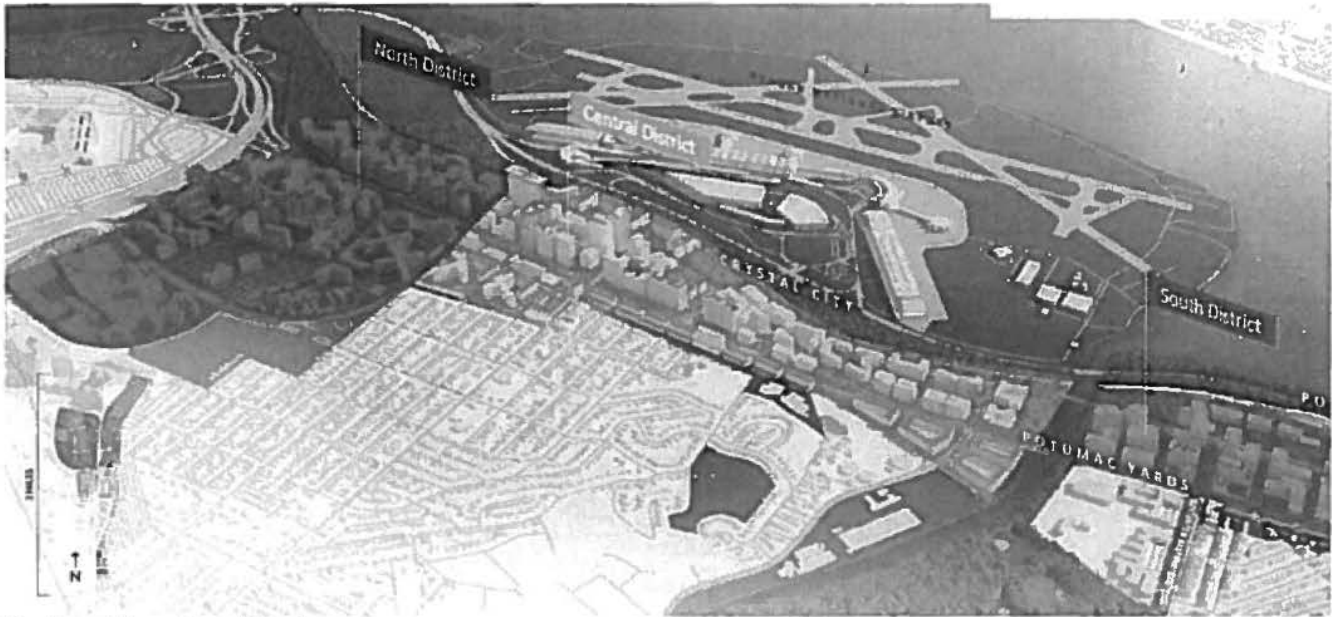
National Landing Site Image

There are numerous sites within National Landing, in all three Districts, that can accommodate Amazon office expansion now and in the future. Many of these sites are land parcels within the existing city block structure, while others have vacant existing buildings awaiting demolition on the site. These parcels are all entitled and require only final design approval and permitting to begin construction of new buildings. The chart below describes the site name, district location and maximum square feet that can be constructed on each site, along with whether the site is encumbered by existing leases or unencumbered at this time. This chart shows a higher density number as it includes redevelopment of existing buildings in addition to the 20,500,000 square feet of entitled density shown above.

National Landing Unencumbered Building Sites - JBG SMITH Sole Ownership

Site Name	District	Maximum Square Feet	Approved Use*	JBG SMITH Ownership
Pen Place	North District	4,000,000	Office or Multifamily	100%
Mets 6	North District	650,000	Office or Multifamily	100%
Mets 7 & 8	North District	1,200,000	Office or Multifamily	100%
101 12th St	North District	250,000	Office or Multifamily	100%
Airport Infill	Central District	700,000	Office or Multifamily	100%
Airport East	Central District	700,000	Office or Multifamily	100%
1900 Crystal	Central District	1,000,000	Office or Multifamily	100%
223 23rd	Central District	900,000	Office or Multifamily	100%
1800 S Bell	Central District	350,000	Office or Multifamily	100%
1750 Crystal	Central District	270,000	Office or Multifamily	100%
PY LBG	South District	675,000	Office or Multifamily	100%
Total Unencumbered Density		**10,695,000**		

National Landing Encumbered Building Sites - JBG SMITH Sole Ownership

Site Name	District	Maximum Square Feet	Approved Use*	JBG SMITH Ownership
201 12th Street	North District	500,000	Office or Multifamily	100%
2001 JDH	Central District	800,000	Office or Multifamily	100%
2221 JDH	Central District	600,000	Office or Multifamily	100%
2100 Crystal Drive	Central District	400,000	Office or Multifamily	100%
2200 Crystal Drive	Central District	400,000	Office or Multifamily	100%
1550 Crystal Drive	Central District	900,000	Office or Multifamily	100%
241 18th Street	Central District	400,000	Office or Multifamily	100%
251 18th Street	Central District	500,000	Office or Multifamily	100%
1901 South Bell	Central District	500,000	Office or Multifamily	100%
Total Encumbered Site Density		**5,000,000**		

National Landing Encumbered Building Sites - JBG SMITH Master Developer

Site Name	District	Maximum Square Feet	Approved Use*	JBG SMITH Ownership
Potomac Yard - LBF	South District	7,525,000	Office or Multifamily	Master Developer
Total Encumbered Site Density		**7,525,000**		

National Landing - Total Density Available	Maximum Square Feet	Approved Use*	JBG SMITH Ownership
National Landing Unencumbered Density	10,695,000	Office or Multifamily	100%
National Landing Encumbered Density**	12,525,000	Office or Multifamily	Blended Control
National Landing Total Additional Density	**23,220,000**		

* Amazon's preferred office sites will adjust residential building locations within National Landing.

** Average weighted lease term for these buildings is 4.9 years from a date of January 1, 2019.

Please see the attached map exhibit (NL Long-Term Occupancy Opportunities) which illustrates the location of these sites within National Landing and also indicates if the site/building is encumbered or unencumbered by existing leases.

c. *Schematic:* Attach schematic drawing of Site.

Real Estate A.5.c. Schematic - National Landing.pdf

Real Estate | Improvements

A6.a. Are there any buildings or structures or other improvements on Site (or portion of Site)?
A6.b. If Yes, describe all buildings, structures and other improvements on Site (or portion of Site), including available square footages and sustainability efforts.

Are there any buildings or structures or other improvements on Site (or portion of Site)?
☒ Yes

There are multiple buildings available on the National Landing Site.

As a single potential HQ2 real estate partner to Amazon, JBG SMITH controls more than 7,000,000 square feet of existing buildings and 20,000,000 square feet of approved building density in National Landing. These buildings can be seen on the map exhibit referenced in Section 5.b. The 285-acre Site comprising the three Districts is in the core of the Washington, D.C. metropolitan area. While JBG SMITH controls many of the parcels and buildings within this urban environment, there are additional buildings and parcels owned by others available to Amazon for future growth needs.

District	Existing Improvements SF (JBG SMITH-Controlled)	Approved Density SF	Earliest New Building Delivery Date*
North	1,876,000	4,000,000**	2020
Central	5,350,000	7,500,000	2022
South	1,290,000	9,000,000	2022
Total	**8,516,000**	**20,500,000**	

*This timing represents when the first available building could be delivered based on any in-place encumbrances.
** An additional 2,000,000 square feet could be approved in the North District subject to development being accommodated within building envelopes, consistent with the Sector Plan, and within the FAA height limits.

- There are over 25 existing residential, office, and hotel buildings located on JBG SMITH-controlled sites within the North, Central, and South Districts occupied by existing tenants, residents, and retailers. Most of these existing buildings will continue to operate and serve those users throughout the HQ2 delivery timeline, while several are planned to be redeveloped during that time period.

Sustainability in the communities of National Landing ranks among the best in the nation.

Arlington County has been named a Platinum level LEED community by the U.S. Green Building Council (USGBC), the first community in the country to receive the honor. JBG SMITH's commitment to environmental sustainability extends beyond managing environmental impact. It is a holistic, cultural commitment to accountable business practices, smart growth, and social responsibility. It matters to the company, its customers, and its investors. In other words, it's a way of life.

- National Landing is an existing, sustainable Site due to its core and urban location, minimizing the footprint of office and housing tenants in their daily lives. It has immediate access to Metro, regional rail, bus rapid transit, foot and bike trails, and even walkable access to an airport, as well as easy access to significant greenspace. The Site also has existing utility and street infrastructure.

- **Programs and Policies**
  The JBG SMITH Sustainability Program focuses on the following areas, which are prioritized across both new development and operating properties. This program meets multiple goals for JBG SMITH, providing cost savings due to the conservation of energy and a commitment to responsible environmental impact of its corporate footprint. JBG SMITH values both the social and financial dividends of this program:

  - Energy Management
  - Utility Procurement and Onsite Generation
  - Water Conservation
  - Waste Reduction and Diversion
  - Indoor Environmental Quality
  - Occupant Engagement

- **Real-Time Energy Monitoring and Management**
  JBG SMITH manages energy usage across the portfolio through the Tenant Service Center, a 24/7 central command center located in the Central District of National Landing. By monitoring building systems in real-time we manage energy usage through sophisticated software tools and demand-limiting strategies. By offering 24-hour monitoring we provide a high level of customer service for our tenants and resiliency for our buildings.

- **Benchmarking Sustainability Performance**
  JBG SMITH utilizes Arc, a new, state-of-the-art digital platform from USGBC that allows projects to benchmark and certify sustainability performance. The Arc Platform tracks energy, water, waste, indoor air quality, occupant comfort, and transportation behaviors and generates a LEED Performance score that allows us to monitor improvements over time.

  JBG SMITH operating assets benchmark performance in EPA's ENERGY STAR Portfolio Manager, an online tool used to measure and track energy and water consumption, as well as greenhouse gas emissions. Buildings that achieve a score of 75 are certified annually with the ENERGY STAR label.

- The current JBG SMITH portfolio includes 9,500,000 square feet of LEED-Certified assets, representing 58% of our assets designated for long-term operations, with another 1,500,000 square feet of LEED Certifications in 2018. Most of the National Landing assets became part of JBG SMITH in July of 2017, and the company is actively pursuing certifications on all eligible properties. The following certifications have already been achieved for new development and existing buildings:

ENERGY STAR	LEED
4,713,499 SF	4,534,389 SF
13 buildings	12 buildings

Real Estate | Improvements

A7. Easements, Licenses, Rights of Way: describe each of the easements, licenses and rights of way affecting Site, and identify the beneficiaries, holders or owners of the same. If easier to show on a map, please attach to submittal and label.

Attached are several easement maps by District and blocks within each District. These easement maps provide the location and extent of each of the many easements that exist in the current urban environment to serve all the infrastructure and users of the buildings and public spaces. The existing infrastructure easements included in the maps include electric service, gas service, water service, telecommunication and data lines, storm and sanitary sewers, and WMATA (metro) easements. Other easements indicate aspects of the built environment such as public streets, access and general utility easements, building structures, open space and emergency vehicle easements. These easements all exist today, but are always being modified through new entitlement, construction, demolition and other impacts to the current buildings and public spaces.

See attached maps with file names:
- Real Estate A.7. National Landing Easements – Central and North Districts.pdf
- Real Estate A.7. National Landing Easements – South District.pdf

JBG SMITH, the largest real estate operator in the D.C. metro area.

JBG has more than 50 years of experience owning, operating, and developing office, multifamily, and retail assets in the D.C. metro market, is the sole owner and/or master developer of all buildings and parcels being proposed for HQ2 in National Landing. With more than 21.3 million square feet in operating assets and an exclusive D.C. area metro market focus, JBG SMITH is a publicly traded REIT (NYSE: JBGS) that owns 100% of the buildings and land (fee simple) presented in the Central and North Districts. JBG SMITH also owns a portion of the South District fee simple and is the master developer on behalf of a private pension fund for the remaining portion of that District.

JBG SMITH's holdings alone can accommodate the entire stated HQ2 requirement.

In addition, JBG SMITH can accommodate a significant amount of associated residential supply.
- As a single HQ2 real estate partner to Amazon, JBG SMITH controls over 7,000,000 square feet of existing buildings and over 20,000,000 square feet of approved building density in National Landing.

  - JBG SMITH's sites in the Central and North Districts are approved for over 9,000,000 square feet of new density, with over 6,000,000 square feet unencumbered and immediately available for HQ2 development. There is also the potential for an additional 2,000,000 square feet of density in the North District, subject to Arlington County approval.

  - JBG SMITH's parcels in the South District are entitled for over 9,000,000 square feet of new density, which can be phased to accommodate long-term HQ2 growth.

JBG SMITH Company Overview:
- Largest real estate operator in the D.C. metro area
- 20,000,000 square feet in operating assets
- 21.3 million square feet in development pipeline
- 50+ years of experience owning, operating, and developing office, multifamily, and retail assets in the D.C. metro market
- Exclusive Washington, D.C. metro market focus—headquartered locally

Placemaking is a core part of our DNA

—a philosophy that is as much about creating compelling experiences as it is about creating remarkable real estate. By strategically mixing high-quality multifamily and commercial buildings with anchor, specialty, and neighborhood retail, along with thoughtfully planned public areas and walkable streets, we define neighborhoods.

JBG SMITH has committed publicly to a board that is 50:50 men and women, which reflects the diversity of its workforce.

Entitlements:
- The Central and North Districts are entitled for mixed-use (office, residential, hotel, retail) development with significant density and height increases available under the Crystal City Sector Plan approved by the Arlington County Board.
- The South District is entitled for mixed-use (office, residential, hotel, retail) development with significant density and height under a Coordinated Development District and a Phased Development Site Plan approved by the City Council of Alexandria.
- More detail is provided in the Planning/Zoning section of the RFI as it relates to the entitlements.

Real Estate | Improvements

A9. Please describe if all or a portion of Site will be made available at no cost, or a reduced cost to the Project.
A9.a.(i). Will a government agency make Site available to the Project at no cost?
A9.a.(i). Will a government agency make Site available to the Project at no cost?
A9.a.(ii). If No, specify the per acre (and total) cost of Site to the Project?
A9.b.(i). Will a nonprofit entity make Site available to the Project at no cost?
A9.b.(ii). If No, specify the per acre (and total) cost of Site to the Project.
A9.c.(i). Will individuals or corporations or other entities make Site available to the Project at no cost?
A9.c.(ii). If No, specify the per acre (and total) cost of Site to the Project?

This flexibility is somewhat dependent upon the timing of occupancy needs and location preferences within the Site.

Will a government agency make Site available to the Project at no cost?
N/A

Will a nonprofit entity make Site available to the Project at no cost?
N/A

Will individuals or corporations or other entities make Site available to the Project at no cost?
☒ No

Existing Rents: Average existing full-service office rental costs in National Landing range from $25/square foot to $42/square foot for existing buildings.

Hard Costs: Current construction costs for new office buildings vary site by site, but generally fall within the ranges presented below:

Hard Cost Category	$/GSF	$/GSF
Sitework:	$10	$15
Parking:	$35	$50
Base Building:	$140	$170
General Contractor:	$19	$28
Contingency:	$10	$13
Development Fee	$6	$8
Total Hard Cost Range:	**$220** /GSF	**$285** /GSF
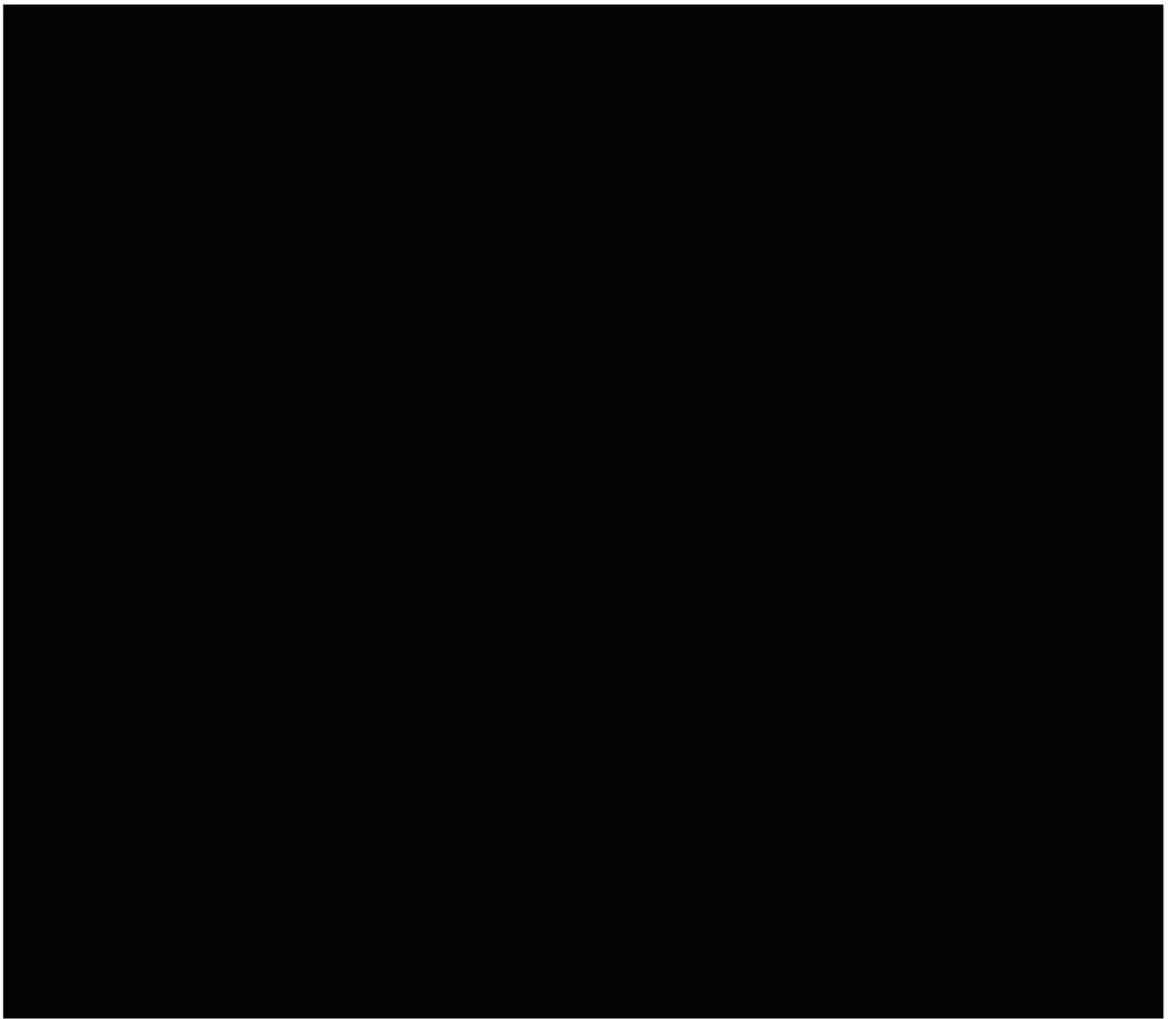
Real Estate | Improvements | Private

A10. Parking: identify all current and future parking options for Site
A10.a. Existing and Planned Retail Development near Site
A10.a.(i). Restaurants
A10.a.(ii). Cinemas
A10.a.(iii). Shopping
A10.a.(iv). Other Public Gathering Spaces (such as coffee shops and local breweries)

Parking options for North and South Districts of National Landing

- Central and North District Parking Options: JBG SMITH controls more than 12,000 parking spaces within its existing portfolio on the Site. Parking requirements for future parking needs can be tailored to meet Amazon's parking objectives on a building-by-building basis.
  - National Landing is also one of the quickest places to obtain a ride from a ride-sharing service such as Uber or Lyft due to National Landing's close proximity to Reagan National Airport. Lyft's regional headquarters is also located in the Central District of National Landing.

- South District Parking Options: Currently, more than 2,000 surface parking spaces exist to serve the operating single-story retail located on most of the South District Site. This parking can be utilized in a phased manner along with construction of new parking building-by-building to accommodate Amazon's needs over time.

- JBG SMITH continues to research the impact of autonomous vehicles on the current and future-built environment, which is likely to have a meaningful impact on parking and traffic solutions.

Restaurants near National Landing

National Landing is an existing, thriving, bustling community that has a distinct energy and a culture that exudes an active lifestyle for its modern workforce and residents. It is a place that offers diverse housing choices, state-of-the-art park facilities, extensive bike trails, an abundance of shopping and eating establishments, as well as a plethora of cultural and entertainment events concentrated within a 15-minute bike ride from anywhere in the office districts. It is placemaking at its best.

There are surprises around every corner and opportunities to engage on a human level at each intersection. While embracing the digital connectivity of the future, the National Landing partners understand that it is the in-person connections that make a difference. The community works hard to create those serendipitous moments to give people that opportunity to meet and mingle, whether it is business or pleasure. The North District has an existing Business Improvement District (BID) that programs daily, weekly, and year-round events and activities centered around health, fitness, art, culture, pets, and food with one common theme – fun! (See the attachment National Landing 2018 Programmed Events List.)

- JBG SMITH has a firm-wide focus on creating and improving places through attention to the type, mix, quantity, and placement of all the retail in its projects. Since gaining ownership of National Landing in July of 2017, the company has developed a focused merchandising strategy to help attract and integrate exceptional restaurants, bars, and cafes to National Landing as plans advance for the Central and North District.

- There are currently more than 300 restaurants, shops, and attractions located on or within walking distance of National Landing that serve the existing community of residents and tenants. Many of the restaurants on site today serve the current tenant base, but the restaurant mix continues to evolve as the office tenant base changes and desires more unique, local offerings.

- Currently underway in JBG SMITH's initial phase of development (commencing this year) is an additional 35,000 square feet of neighborhood-serving restaurants and retail stores to the Central District anchored by the new Alamo Drafthouse Cinema and neighborhood grocery store.

- Each new HQ2 building delivery will also add additional restaurants and retail at the base of the building. JBG SMITH is willing to partner with Amazon and look to its employees for input in recruiting those retail tenants.

Cinemas near National Landing

There is currently one operating cinema located at National Landing as well as plans for the previously mentioned Alamo Drafthouse Cinema (opening planned for 2020) to anchor its next phase of development in the Central District adjacent to the Immediate Occupancy buildings. Alamo serves high-quality food and beverage to patrons in their cinema seats as they enjoy first-run and special-run films, and the property will also have a large restaurant and bar in National Landing. Alamo also engages with the community in many ways, through use of the space for special events and allowing public uses of the space.

Shopping near National Landing

As we've noted, there is a significant regional retail presence adjacent to and on National Landing's site, which includes more than 300 restaurants, shops, and attractions, and seven grocery stores.

- The North District contains a large selection of national and regional retailers, including a new Whole Foods Market.

- The Central District has a new neighborhood grocery store being delivered in 2020 on the same block as the proposed Immediate Occupancy space, as well as dozens of restaurants, retail stores, and service retail establishments.

- The South District has significant existing retail, much of which will be redeveloped and delivered back into the base of the new buildings, while other anchors, like the Giant grocery store, will remain and serve the community throughout the HQ2 expansion.
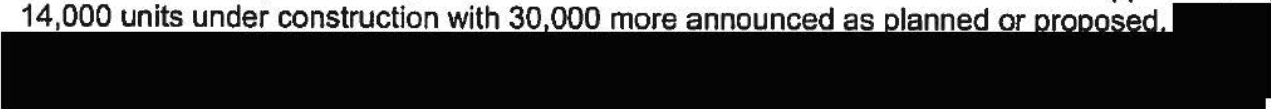
Other public gathering spaces near National Landing

- There are multiple coffee shops and places to meet for a fun after-work gathering both within National Landing and nearby walking distance. The Washington, D.C. metro area has a vibrant local brewing scene, with more than 70 breweries in the region that can easily be accessed from the centrally located Site.

- There are also eight gyms (including a rock-climbing facility) either on the Site or within walking distance. Additional boutique fitness offerings are planned for the new buildings to supplement the existing fitness facilities.

One of the unique advantages of National Landing is the strong diversity in neighborhoods and housing typology that closely surrounds it.

One of the unique advantages of National Landing is the strong diversity in neighborhoods and housing typology that closely surround it. Neighborhoods range from traditional suburban neighborhoods like Aurora Highlands to mixed-use transit-oriented areas like Clarendon and Pentagon City, historic downtowns like Old Town Alexandria, and the urban core of Washington, D.C. itself. This diversity presents the broadest spectrum of options for Amazon's employees from young singles to established families at a wide range of affordability. National Landing is particularly well-positioned to the region's young workforce and the apartment housing they favor – the largest concentration of both are found within just 5 miles of the site. Please see the attached neighborhood profiles (NL Neighborhood Profiles) for more information on housing options within a reasonable commuting distance from the National Landing site.

- The five-mile radius area around National Landing boasts more than 388,000 housing units that are 91.7% occupied based on 2017 data.

- Of those occupied units, 33.1% of housing units are owned while 58.6% are rented.

- Based on an industry-standard metric of maximum affordability at 30% of pre-tax income, CoStar/Apartments.com data show more than 90,000 units of 1-bedroom and 2-bedroom rental units in the market that are affordable to Amazon's current employee estimated range of corporate incomes. If this analysis is expanded to include studios, that figure jumps to 111,000 units.

- The condominium market is also quite robust, with Redfin data from the last three years showing an average of more than 1,000 listings on the market monthly at all prices in the zip codes surrounding National Landing.

- Townhomes are plentiful, with an average of more than 700 active listings monthly during the same time period.

- For families, there's also an abundance of single-family homes, with the same analysis showing an average of 636 homes on the market every month. Narrowing the for-sale analysis to look specifically at single-family homes with two bedrooms or more within five miles of the Site shows 1,188 sales in the past three years. Within a five-mile radius of the Site there are approximately 14,000 units under construction with 30,000 more announced as planned or proposed.

Housing affordability is key to the City of Alexandria and Arlington County's future of remaining inclusive and diverse while accommodating more jobs and people. Efforts to expand affordability are woven into each of our long-range planning efforts and community building culture. For example, the City of Alexandria's 2013 Housing Master Plan (HMP), a tool to help the City achieve this goal, provides a range of financial, land use and zoning tools to amplify the City's efforts to produce and preserve affordable housing units above and beyond those that are available as "market rate affordable." Similarly, in 2015, Arlington adopted its Affordable Housing Master Plan (AHMP) using the same tools as a key element of its Comprehensive Plan, and includes a goal that, "By 2040, 17.7% of the County's housing stock should be affordable rentals to meet the needs of renter households with incomes at or below 60% AMI."

Arlington County and the City of Alexandria combined have an inventory of more than 8,700 Committed Affordable units (CAFs). These units are guaranteed by agreement with federal, state, or City/County government, or through mechanisms such as tax-exempt financing, to remain affordable to low and moderate-income households for a specified period of time; generally, 30 to 60 years. Rents in most cases are affordable to households earning 60% or less of the area median income, although some CAFs have rents affordable to households earning up to 80% AMI.

Within National Landing, there are 440 CAFs in a variety of housing styles. Additionally, there over 380 market rate affordable units below 60% AMI and another 1,900 units between 60%-80%AMI. Within the City of Alexandria portion of the site there are also 34 home ownership units ranging from 80-120% of AMI. As part of the City's and County's incentive proposal, together we have committed to add 1,000 more affordable units by partnering with nonprofits and private developers over the next 10 years in the vicinity of National Landing. This will include both preservation/renovation and new construction to meet the demands of future housing needs.

The overall network of public spaces available within and connected to National Landing in the heart of the Washington, D.C. metro area is unparalleled regionally and rivals any national comparisons as well.

- **National Landing is located immediately to the west of the Mount Vernon Trail** along the George Washington Parkway, dedicated to preserving natural scenery along the Potomac River. Situated right along the river's bank, the Parkway contains hundreds of acres of passive and active recreation opportunities with iconic views of monumental Washington, D.C., access to the waterfront, and connections to regional green spaces. Gravelly Point Park is an example of 30 acres situated at the end of the airport runway where families often go to play catch or have a picnic and watch the planes take off from neighboring Reagan National Airport. It also has miles of running and biking trails as well as other natural elements. Additionally, it provides connections to park spaces like Theodore Roosevelt Island Park, Rock Creek Park, the National Mall, Mount Vernon, the Washington & Old Dominion (W&OD) Rail Trail, and dozens of other national and local parks and public spaces.

- The North and Central Districts currently have several acres of active urban parks, and the approved plan for the area requires 13 acres of new park/plaza space within the Districts. The Districts also connect immediately to adjacent Arlington County parkland and open space, like the **30-acre Arlington County Long Bridge Park**, which will receive a new aquatics center in the coming years. In the North District an existing 30-acre park, **Virginia Highlands**, is full of activity with a multitude of ballfields, playgrounds, and other active recreation features.

- The South District is connected to the **Potomac Yard north-south linear park** that will be expanded as development in the District continues. The linear park includes tennis and basketball courts, children's play areas, running and biking paths, and connections to other local parks like Four Mile Run.

Real Estate | Improvements | Private
A13. Plat(s): attach plat(s) of Site and label according to section.

Real Estate | Planning/Zoning
B1. Designation(s): identify Site's current planning/zoning designations(s)

Central and North District (Arlington County) Planning/Zoning Guidance:

Detailed planning recommendations are applicable to the Sites, and the presence of this specific guidance will help speed development processes:

General Land Use Plan (GLUP)/Zoning – The Arlington County GLUP provides general guidance for land use within the County, which contains the North and Central Districts. The Sites generally fall within three GLUP categories (and are also located within the "Crystal City Coordinated Redevelopment District" as identified on the GLUP). The three GLUP categories include:

- Crystal City, west side of Crystal Drive – High Office-Apartment-Hotel. The majority of these sites are zoned C-O (Mixed-Use District), but are eligible for rezoning to C-O Crystal City. This rezoning permits significant increases in density within the form requirements provided for in the Crystal City Sector Plan

- Crystal City, east side of Crystal Drive – Low Office-Apartment-Hotel. The majority of these sites are zoned C-O-1.5 (Mixed-Use District), but are eligible for rezoning to C-O Crystal City

- Pentagon City – ¾ High-Medium Residential, ¼ Medium Office-Apartment-Hotel

Central District - Crystal City Sector Plan (CCSP) – Parcels located within the Central District area are subject to the CCSP. This plan provides for significant increases in density from the underlying zoning, as well as form-based guidelines to help streamline development.

North District - Pentagon City Phased Development Site Plan (PDSP) – Parcels located within the North District area are subject to the PDSP. This previously approved zoning entitlement allocates specific densities to individual blocks that are beyond the density provided by the underlying zoning.

The PenPlace parcel, in particular, is subject to an additional entitlement that designates significant density and building heights on individual pad sites within the area.

South District (City of Alexandria) Planning/Zoning Guidance:

The South District is located in the City of Alexandria and is controlled by two zoned Coordinated Development Districts (CDDs). The two governing CDDs are #19 and #10, which are approved and planned for office, retail, hotel, residential, and mixed-use.

Real Estate | Planning/Zoning
B2. Floor Area Ratio (FAR): identify Site's current FAR

The existing FAR for parcels in the Central and North Districts varies, but is typically between 3.0 and 4.0.

- Maximum permitted FAR for these parcels under existing zoning is 3.8 for commercial and 4.8 for residential (though the use of bonus density can increase these amounts).

- The parcels in these Districts are permitted, and recommended by Arlington County in the CCSP, to be rezoned to the C-O Crystal City zoning category. This rezoning permits significant additional density (with no specific numeric FAR limit), so long as such density is within the building form parameters provided for in the Crystal City Sector Plan.

- Most of the parcels within the North District are currently undeveloped, with a zero FAR. The permitted FAR is set by the PDSP, and allows for density up to 4.74 FAR.

The approved FAR for the South District is between 2.5 and 3.5, which provides for over 10,000,000 square feet of new development in the District per approved zoning and planning documents, of which only approximately 1,200,000 square feet is newly constructed or committed to users.

Real Estate | Planning/Zoning
B3. Permitted Use(s): briefly describe Site's current permitted use(s)

All of the Districts permit a wide range of mixed-use development, including office, residential, hotel, retail, and open space.

Real Estate | Planning/Zoning

B4. Rezoning: must Site be rezoned for the Project's expected use?
B4.a. If Yes, outline rezoning process, including all government approvals, public hearings, and schedule. Please describe any opportunity to fast track.
B4.b. If Yes, will governments commit to rezoning prior to Site selection?

Must National Landing be rezoned for the Project's expected use?
☒ Yes   ☒ No

For Phase I, National Landing Sites do not need to be rezoned, as the buildings proposed to accommodate Phase I program needs are presumed to already be existing/entitled and appropriately zoned.

For Phase II/Full-Buildout of both Sites, if a rezoning is needed (based on Amazon's specific proposed development projects), all Districts are subject to adopted sector plans or Phased Development Site Plans that establish a preferred vision for these areas along with associated planning recommendations or design guidelines. As standard practice, the localities typically rezone property concurrent with (and not in advance of) its approval of site plan development applications.

Real Estate | Planning/Zoning | Neighboring Properties
B5.a. Designation(s): identify current planning/zoning designation(s) for Neighboring Properties.
B5.b. Permitted Use(s): briefly describe Neighboring Properties' permitted use(s).

Most of the neighboring properties (excluding open space and highway areas) are subject to the same planning guidance as the Districts; i.e. neighboring properties in the Central District are subject to the CCSP, and neighboring properties in the North District are subject to the PDSP. In addition, they are typically subject to the same zoning category as the sites to which they are adjacent. In the South District, the properties to the west are subject to similar planning guidance: the predominantly commercially developed parcels across Route 1 are zoned CDD #24 (Oakville Triangle/Route 1 Corridor), and are planned for mixed-use development to include retail, hotel, office, residential, homes for the elderly, parks and open space, and community facilities.

Except for protected open space and highways areas, all the neighboring properties surrounding the Site are planned and zoned to accommodate varying levels of mixed-use, office, residential, hotel, and retail development.

Real Estate | Environment

C1. Site and Improvements (if any)
C1.a. Prior Use(s): detail prior use(s) of Site (or portion of Site) in reverse chronological order.
C1.b.(i). Detail each environmental event occurring on Site (or portion of Site) in reverse chronological order.
(Environmental events include – but are not limited to – any contamination, dumping, explosion, fire, landfill or spill of any kind or description)
C1.b.(ii). Describe any environmental cleanup or remediation occurring on Site (or portion of Site) as a result of an environmental event or otherwise in reverse chronological order. Please also include any environmental studies as supplemental information.
C1.c.(i). Detail each environmental study undertaken on Site (or portion of Site) in reverse chronological order.
C1.c.(ii). Provide copies of environmental studies performed on the site within the prior three years.

Prior Use(s): detail prior use(s) of Site (or portion of Site) in reverse chronological order:

North and Central Districts: The existing urban environment containing buildings has existed since the 1960s. Prior to that, the area was used as a rail yard switching station.
South District: The area was mainly ballfields and open space before the current projects began; prior to that the site was a rail yard switching station.

No environmental events have occurred at National Landing.

Describe any environmental cleanup or remediation occurring on National Landing:

Current buildings need to be abated of asbestos when demolished or renovated. Site contains areas of contaminated soil from previous use as rail yard switching station and may need to be delivered to appropriate landfills.

Detail each environmental study undertaken on Site (or portion of Site) in reverse chronological order:

There have been many studies conducted on the existing buildings and on the soil when developing new buildings over the years. The environmental efforts undertaken onsite are typical of any urban condition, with significant experience by all stakeholders in this work.

Provide copies of environmental studies performed on the site within the prior three years:
These studies are available upon request but are not attached here given the scale of the project and number of studies completed in past years.

Real Estate | Environment | Neighboring Properties

C2.a. Prior Use(s): detail prior use(s) of Neighboring Properties in reverse chronological order. Please include any environmental events. Please also include any environmental studies as supplemental information.

Prior Use(s): detail prior use(s) of Neighboring Properties in reverse chronological order. Please include any environmental events:
Same as Site.

Real Estate | Environment | Topography

C3.a. Elevation: identify Site's minimum and maximum topographic elevation. Please provide a topographic survey of Site, if available.

C3.b. Terrain: describe Site's terrain and Neighboring Properties' terrain:

C3.c. Wetlands: describe bodies of water, creeks, ditches, lakes, ponds, rivers and wetlands, and identify governing body or regulatory agency for each for Site and Neighboring Properties.

Topographic plans for the Immediate Occupancy parcels in the Central District and for the entire South District are attached with the file name:

Real Estate C.3.a. National Landing Topo Plans - South District and Immediate Occupancy Parcels.pdf

National Landing's terrain and Neighboring Properties' terrain:

- The South District is generally level, with only a few feet of change in total elevation throughout the Site, and remains generally level to the neighboring properties to the west.

- The George Washington Parkway, rail and Metro lines, and the Potomac River lie to the east, with the land sloping gently from the Site to the Potomac.

- The Central and North Districts have an approximate 20' grade change from east to west, but are generally level in the north-south direction and west of Route 1.

- Neighboring properties to the south, west, and north are all generally at the same elevation as the Site along those borders.

Wetlands: describe bodies of water, creeks, ditches, lakes, ponds, rivers and wetlands, and identify governing body or regulatory agency for each for Site and Neighboring Properties.

- The South District's northern edge fronts on a Potomac River tributary named Four Mile Run, which runs from the west until it enters the Potomac River just east of the Site.

- The regulatory body that oversees this watershed is the Virginia Department of Environmental Quality.

- The typical topography of National Landing is flat with surface grades of about EL. +40 ft. msl. Most of the parcels in National Landing were graded and developed many years ago, and some shallow, man-placed fill exists to about EL. +25.

- The man-placed fill soils are often graded from nearby areas and are sands, silts, and clays. The underlying soils in this area of Arlington and Alexandria are largely attributed to alluvial deposits from the adjacent Potomac River, a feature that is responsible for most of the geologic deposits in the Washington, D.C. area. Below the fill soils are alluvial sands, gravels, and clays with variable densities extending down to about EL. -10 ft. The coarser sands and gravels can be dense at the lower elevations. Below EL. -10 ft. and extending several hundred feet lies the Potomac Formation, a large alluvial/marine soil deposit that is dense and over-consolidated. Groundwater is often found at the interface of the alluvial sands and the upper Potomac at EL. -10 ft. Bedrock is several hundred feet deep in this area.

- There are few problem soils in the National Landing Site and building foundations are often placed at the lower alluvium or Potomac Formation.

Significant soil testing has occurred with each new building, as well as testing by other agencies, like WMATA (Metrorail), when expanding or constructing Metro or transit authorities. Additional testing occurs with each new project.

Real Estate | Environment | Studies Permit(s)

C5.a. Specify all required environmental impact assessments and other environmental studies, and name relevant regulatory agency or agencies.

C5.b. Specify all required environmental permits, and name each government issuer of same. Can the environmental and building permits be integrated? Include a timetable for approvals.

Arlington County does not have any environmental impact assessments and other environmental studies that would be required for the project. The County does not require Environmental Impact Statements (EISs) or similar studies as a matter of course.

As part of the City of Alexandria's site plan review process, developers are required to provide plans to manage or control a variety of environmental factors. These include: stormwater and sanitary sewer management, erosion and sediment control, and environmental hazard mitigation. If environmental investigations determine that an environmental site assessment (ESA) is required, this study and the development of any subsequent management plans would be completed concurrent with the site plan review process. The regulatory agency is the city's Department of Transportation and Environmental Services (TES).

Environmental Permits Issued by Arlington County:

- Land Disturbing Activity (LDA) Permit:
  https://building.arlingtonva.us/land-disturbing-activity-permit/
  This is the 'blanket' permit covering:

  o Arlington County Code: Erosion and Sediment Control
  http://topics.arlingtonva.us/permits-licenses/land-disturbing-activity-permit/

  o Arlington County Code: Stormwater Management https://building.arlingtonva.us/stormwater-management-ordinance/

  o Arlington County Code: Chesapeake Bay Preservation Ordinance
  http://topics.arlingtonva.us/building/chesapeake-bay-preservation-ordinance/

  o Floodplain Management Ordinance applies in floodplains:
  https://environment.arlingtonva.us/flood-insurance-rate-maps/

- This guidance manual explains the LDA permitting process and requirements:
  https://arlingtonva.s3.dualstack.us-east-1.amazonaws.com/wp-content/uploads/sites/38/2016/09/DES-Stormwater-Management-Ordinance-Guidance-Manual.pdf

The required state permit for stormwater management is issued through Arlington County Government and is an integrated part of the LDA permit process. Information for reference here:
http://www.deq.virginia.gov/Programs/Water/StormwaterManagement/VSMPPermits/ConstructionGeneralPermit.aspx

The City of Alexandria would require the following permits:
- Stormwater Management
- Erosion and Sediment Control

Environmental permits are identified during the preliminary site plan review process, which typically takes eight to ten months to complete. Permits are approved during the final site plan review process, which includes multiple City departments that make up the City's Interdepartmental Review (IDR) team. The final site plan stage is typically a six to eight-month process depending on the size and complexity of the project.

Building permits are issued following approval of any required special use permits and the final site plan which includes detailed engineering drawings. Alexandria will commit to the creation of a dedicated interdepartmental team of City staff to ensure the Project's development review and approval process is expedited.

Environmental Permits Issued by Commonwealth of Virginia or Federal Government:
(See above for stormwater management.)
- Virginia DEQ manages program for soil/groundwater contamination and remediation: See http://www.deq.virginia.gov/Programs/LandProtectionRevitalization.aspx

- For sites with contamination that may require de-watering during construction:
  - Discharges to the storm drain system are permitted by Virginia DEQ: http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeEliminati on.aspx
  - Recently amended: http://townhall.virginia.gov/L/ViewAction.cfm?actionid=4548
  - Discharges to the sanitary sewer system are permitted by ACG: See https://water.arlingtonva.us/sewer/water-pretreatment-program/

- For direct impacts to stream and jurisdictional wetlands, a Joint Permit Application could be required for state and federal permitting. Obtaining coverage typically also requires an endangered and threatened species assessment and a cultural resources survey. ACG does not issue these permits.

If there is no site contamination, direct impacts to stream and jurisdictional wetlands, or floodplain issues, no environmental approvals would be needed by Virginia or the Federal Government.

For new buildings in the North and Central Districts, following site plan approval, a development project must complete the Civil Engineering Plan review process (involving all County-related environmental requirement/permitting), typically prior to the submission of building permit applications. Building permit applications would not be approved before Civil Engineering Plan approval.

Real Estate | Environment | Studies Permit(s)

C6. Process: briefly describe the environmental study and permit processes, from preliminary discussions to final action, including any appeal periods. Also include the total costs for a building permit.

In Arlington, the current maximum cost for a commercial LDA permit is about $65,000- existing Erosion and Sediment and Stormwater Management fees will increase by 30% starting 7/1/2018, and there are also some new fees being introduced. As a result, the estimated maximum LDA permit fee for projects after 7/1/2018 is $65,000x1.3 = $84,500.

For benchmarking purposes, based on four commercial building projects located near a Metro station in Arlington County, the average timeframe from submission to final approval is six to 10 months. This timing greatly depends on the plan quality and response time by the development engineering and design team; the County has a set timeline for review, and always completes its review before the due date.

https://building.arlingtonva.us/from-planning-to-move-in-building-process-overview/

As noted above, in Alexandria environmental permits are issued as part of the preliminary site plan review process. If during the preliminary review, it is determined that an environmental site assessment (ESA) is required, Phase I and II of the ESA process would occur concurrent with the review and approval of the development permit and final site plan. In total, this process takes approximately 14-18 months to complete.

Costs associated with building permits are included later in the document.

Real Estate | Environment | Code(s), Regulations

C7.a. Include with your response a copy of the relevant state and local environmental code(s) and regulations. (Federal statutes and regulations need not be included with your response.)

C7.b. Are amendments to the relevant environmental code(s) and regulations pending or proposed?
     If Yes, please provide detail

Virginia seeks a balanced approach to regulatory oversight, encouraging input from all segments of the community. Whenever possible, Virginia seeks to moderate costs and inefficiencies, recognizing that unnecessary administrative and regulatory barriers affect business productivity and competitiveness. As a part of this on-going vigilance, all state regulatory agencies routinely review their business regulations for opportunities to deregulate or streamline procedures. Virginia's environmental permits rarely require more than that mandated by the U.S. EPA where there is an applicable federal program. In cases of state-only programs, Virginia's requirements are based on those necessary to protect public health, safety and welfare in the most efficient, cost effective manner.

It is not expected that this project would require environmental permits issued by the Virginia Department of Environmental Quality (DEQ). However, should the project need a DEQ issued permit, the timing of an individual decision depends on the type of permit required and the time when a complete application is submitted to DEQ. DEQ will work with the company during the application process to speed up the completion of the application and the approval process. DEQ has historically provided the highest priority to processing environmental permits for new and expanding businesses and offers a single point of contact to assist businesses with coordination of the permitting processes.

Virginia's local governments also offer streamlined permitting processes and provide dedicated project managers to assist companies through the planning and construction process. The required permits mentioned previously include building permits, Land Disturbing Activity (LDA) Permit, Stormwater management, and Sediment and Erosion Control.

Real Estate | Environment | Code(s), Regulations

C8. Noise Restrictions: detail all noise restrictions or limitations affecting Site and any exceptions to or exemptions from same. Attach the appropriate statutory and other authorities.

While there are no noise restrictions or limitations on the activity of a business operating in National Landing, there are noise ordinances regarding construction activity. We can provide that information upon request.

Real Estate | Building

D1. Permits: specify all required building permits, and name government issuer of same.

We have included all needed building permits here, which assumes an existing building located on the Site; however, some of these are not needed if the project Site is currently vacant land:

1) Raze/Demolition Permit (if needed)

2) Support of excavation/excavation (SOE)

3) Foundation to Grade (if desired to expedite schedule)

4) Building Permit

5) Interior Alteration Permit (tenant Improvements for office/retail uses only)

6) Certificate of Occupancy
   - All these permits require plan review and issuance by the respective local jurisdictional permit/inspections review department.
     - The issuer in Arlington County (Central and North Districts) is Arlington Inspection Service Division
     - The issuer in the City of Alexandria (South District) is the Alexandria Permit Center Team

D2.a. Briefly describe the building permit process, from pre-application discussions to final action, including any appeal periods.
D2.b. Briefly describe the estimated cost to obtain a building permit for the project. Please attach a copy of the building permit ordinance.

The City of Alexandria and Arlington County consider themselves part of the team.

The culture is designed to help developers, design professionals, and contractors understand the permit processes and to overall support projects. Communication is key. Both localities have processes in place to allow for projects to be conceptually discussed and feedback given prior to submitting plans. Multiple departments work together and coordinate to improve customer service, ultimately saving time and money for the applicants.

Arlington and Alexandria have a long history of planning for development in National Landing. The localities have worked together on transportation planning, development planning, and fiber connectivity to make National Landing the premier site. In the spirit of this cooperation, Arlington and Alexandria are currently in the process of exploring potential strategies that could help lead to more effective joint plan implementation in its portion of the National Landing Site. Several key goals of potentially employing such strategies include a desire for more effective plan implementation that advances the transformative vision for this mixed-use, transit-oriented area, employing a more sensible and efficient development review process that saves time and resources for all involved, and considering potential development projects with greater attention being paid to the importance of project feasibility, in recognition of the sometimes-challenging economics of redevelopment in this area. The localities continue to advance efforts in exploring and considering the application of potential strategies that can make a real difference in these areas.

- For new building, the process will typically involve initial discussions with Planning staff, followed by the public design review, and ending with an approval by the County or City's legislative body.

- Following approval of a development, there is a 30-day appeal period prior to the order becoming final.

- In Virginia, decisions made on these issues by the County Board and City Council are given significant deference, and, as a result, there is an extremely high burden of proof needed to overturn such a decision.

After the entitlement process, the design is completed and submitted for Building Permits.

- Permits are administrative in nature and are specifically reviewed for code compliance and life safety as primary goals.
- These are issued by a large, professional building inspections team in both jurisdictions and have no appeals period.

Permit fees:

- In the North and Central Districts (Arlington County) building permit fees are $0.75 per gross square foot of total floor area, a 2% USBC fee, a 5% automation fee, and a 15% indirect cost surcharge.

- Depending on the specific actions associated with a development project (e.g., site plan application, rezoning, etc.), the estimated cost to permit the project can vary.

- As a hypothetical scenario for benchmarking, assuming a 500,000-square-feet new commercial office building on a two-acre site, the estimated costs of fees to the County to entitle and permit the construction of the project are presented below:

Example of Building Permit Fee for Like Project
(assumes 500,000-SF building on two-acre site)

Building Permit Fee	$ 375,000.00	
LDA Permit Fee	$ 55,000.00	(est. max.)
Total Above Fees	**$ 430,000.00**	

As a second hypothetical scenario for benchmarking, assuming a 250,000-square-foot new commercial office building on a one-acre site, the estimated costs of fees to the County to entitle and permit the construction of the project are as presented below:

Example of Building Permit Fee for Like Project
(assumes 250,000-SF building on one-acre site)

Building Permit Fee	$ 187,500.00	
LDA Permit Fee	$ 55,000.00	(est. max.)
Total Above Fees	**$ 242,500.00**	

The fee rates and structure are substantially similar in the South District; below is a link to the City of Alexandria's fee schedule.

The link to the relevant Virginia Codes is: https://codes.iccsafe.org/public/collections/VA

Real Estate | Building | Process

D3. Timetable: outline the timetable for a building permit process for a project such as that proposed by the Project and include whether the community can commit to a timetable for approval.

In the North and Central Districts, the timeline for obtaining building permits following entitlement varies depending on the complexity of the project; however, typical timelines are around three months of County review (not including developer time to respond to County comments) for a significant project. In this case, the local jurisdiction intends on creating a specialized team to review projects. As a result, the process for building permits will be expedited further for technology users in these jurisdictions. Permits are typically issued before their needed dates based upon customary construction schedules in both jurisdictions.

In the South District, Alexandria can review a normal office building in 20 working days and allow 15 days for revisions. This does not include Planning & Zoning and Transportation & Environmental Services review timelines. These timeframes currently have a 99% success rate.

There are also additional resources if required to perform plan reviews in order to meet a more aggressive schedule or additional work. The following link has more information on typical time frames:

https://www.alexandriava.gov/uploadedFiles/code/info/PP201206 Plan Review Time Frame Rev. 1217.pdf

Real Estate | Building | Process

D4. Restrictions: outline any height restrictions relevant to Site.

Given the proximity of National Landing to Reagan National Airport, the maximum building heights included in both jurisdictions' adopted plans for the area are based on very close coordination with the FAA to ensure minimal/no impact on airspace operations.

- Buildings within the Central District and subject to the CCSP have maximum heights delineated by the CCSP, and typically range from 200' to 300,' with two outlying sites at 150' and 110.'

- The North District has heights delineated by the PDSPs and range from 16 to 22 floors. Other Sites within the North District are typically zoned C-0-2.5, which provides for maximum heights of 12 stories for office buildings (though these heights can be increased through certain bonus mechanisms).

- The South District building heights range from approximately 100' up to 250' of allowable height within the District.

Real Estate | Utilities

E. For each of the following utilities/services, list the name of the utility/service provider, the person assigned to work with the Project and the relevant contact information for that person.

- Water
- Wastewater
- Electricity
- Natural Gas
- Solid Waste
- Drainage/Storm Water
- Telecommunications
- Broadband

E1. Water: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned.
E1.a.(I). Impact Fee
E1.a.(Ii). Extension of water line(s)
E1.a.(Iii). Installation of water line(s)
E1.a.(iv). Tap Fee(s)
E1.a.(v). Other relevant fees and assessments

Water
Virginia American Water: Matthew Ganci, (703) 706-3862
Arlington County: Greg Emmanuel, (703) 228-5022

Wastewater
City of Alexandria: Erin Bevis-Carver, (703) 746-4154
Arlington County: Greg Emmanuel, (703) 228-5022

Electricity
Dominion Electric: Ken Holmes, (703) 838-2478

Natural Gas
Washington Gas: Pat Estrada-Palma, (703) 750-5657

Solid Waste
City of Alexandria: Erin Bevis-Carver, (703) 746-4154
Arlington County: Greg Emmanuel, (703) 228-5022

Drainage/Storm Water
City of Alexandria: Shanna Austin, (703) 746-4063

Telecommunications
ConnectArlington – Arlington County: Jack Belcher, (703) 228-3220

Broadband
Level3, AboveNet, Jones Communications, MCI

All utilities, wet and dry, are available within the Site of a size and location to support all anticipated, approved densities needed for HQ2. The file names for the utility plans are:

Real Estate E. National Landing Utilities – Central and North Districts.pdf

Real Estate E. National Landing Utilities – South District.pdf

Real Estate | Utilities | Cost: Water

E1. Water: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned.
E1.a.(i). Impact Fee
E1.a.(ii). Extension of water line(s)
E1.a.(iii). Installation of water line(s)
E1.a.(iv). Tap Fee(s)
E1.a.(v). Other relevant fees and assessments

Arlington County is the service provider for the Arlington portion of the National Landing Site (North and Central Districts).

There is a fully developed water distribution system already in place, generally aligned with the existing urban street system that has the capacity to support existing development and additional planned infill.

Virginia American Water is the water service provider in the South District.

There is a fully developed water distribution system already in place which includes a 12" main line serving the site. Given the existing and proposed street grids, the distance from the main line to the proposed locations for construction will be 1-2 city blocks.

Costs for Arlington County:
Given the above condition, for phases of development that are repurposing existing buildings, no water distribution upgrades are expected. Costs would only include typical permitting fees and additional drainage fixture fees ($200/dfu per attachment) if any internal tenant build-out resulted in additional plumbing fixtures.

For any new building construction, fees would be handled on a site-specific basis, based on the number of drainage fixture units (DFUs), distance to a main, etc. Because the primary infrastructure is in place, the maximum typical investment would be a water line for one block.

The site-specific conditions vary substantially, including impact on the adjacent right-of-way. For order of magnitude comparisons, we extrapolated fees from a recent new office construction on a major arterial, and normalized to a 300,000-square-foot size, and included the various fees for the right-of-way that were affected during the construction period. During lane closures, multiple utilities such as water, sewer, gas, communications, and electrical are constructed simultaneously.

The estimates are based on fees recently charged by Arlington for a similarly sized commercial/office building adjacent to the Capital View Site, adjusted for a 300,000-square-foot floor area:

DFUs (includes a 4" water meter typical for this size building)	$90,000
Right-of-Way Use Permit for work in the r/w	$5,000
Transportation Right-of-Way Use Permit for lane, trail or sidewalk closures, parking meter removals (for all building and utility-related construction)	$150,000
Civil Engineering Plan Review and approval (for all building and utility-related infrastructure)	$30,000
Typical public infrastructure improvements based on building in similar County location include site-specific water, sewer, storm, curb, gutter, sidewalk, streetlights, and street trees	$400,000
Public improvement bond processing fees (for all public infrastructure)	$2,500

Total cost estimate for Utilities, and Right-of-Way	**$677,500** **~$700,000**

Costs for City of Alexandria:
For new construction, fees would be determined on a site-specific basis, based on the distance to the distribution system, line and meter size, and other specific building requirements. To provide some order of magnitude, the cost to install/connect the domestic service lines, meters, and fire services for a 100,000-square-foot office building currently under construction in Alexandria in the South District was $70,000. This does not include the costs for permits.

There is no Impact Fee.

Extension of water line(s):
This is determined on a site-specific basis for a development project and relates to the distance required to connect to an existing adjacent water main in the street. This cost is generally born by the developer.

Installation of water line(s):
This is undertaken on a site-specific basis for a development project and is incorporated into the overall development project cost.

Tap Fee(s):
Arlington charges a DFU fee by unit for development projects that incorporates the building water meter.

Alexandria does not charge tap fee(s).

Other relevant fees and assessments:
See chart in Section (a) for an overall estimate of fees and infrastructure improvements for a typical 300,000-square-foot office building. Water lines and service is not segregated as a separate set of plan review, permitting, and inspection fees. This work is built into the large civil engineering package that is reviewed, permitted, and inspected by Arlington County; all items other than the DFUs are captured this way.

Real Estate | Utilities | Cost: Wastewater

E2. Wastewater: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned.
E2.a.(i). Impact Fee
E2.a.(ii). Extension of water line(s)
E2.a.(iii). Installation of water line(s)
E2.a.(iv). Tap Fee(s)
E2.a.(v). Other relevant fees and assessments

Arlington County is the service provider for both the North and Central Districts. There is a fully developed wastewater collection system generally aligned with the existing urban street system, and a wastewater treatment system that has the capacity to support existing development and planned infill.

In the South District, Alexandria takes into consideration three sanitary sewer components in regards to capacity:

- Local City-owned sanitary collector sewers
- Alexandria Renew Enterprises (AlexRenew) interceptor sewer
- AlexRenew wastewater treatment facility

Staff analysis indicates there will be sufficient capacity in the interceptor sewer and at wastewater treatment facility to handle the additional flows from this project. The City of Alexandria's multi-year capital improvement program includes approximately $400 million to improve the combine sewer outfalls, which will provide a major benefit to this Site. Capacity of the local City-owned sewers is determined at the development site plan (DSP)/development special use permit (DSUP) stage. Some additional sewers or upsizing of local collector sewers may be required to serve the Project.

Cost estimates for wastewater service to project at National Landing:
For phases of development that are repurposing existing buildings, no sewer distribution upgrades are expected. Costs would only include typical permitting fees and additional drainage fixture fees ($200/dfu per attachment) if any internal tenant build-out resulted in additional plumbing fixtures. For any new building construction, fees would be handled on a site-specific basis, based on the number of drainage fixture units, distance to a main, etc. Because the primary infrastructure is in place, the maximum typical investment would be a sewer line for one block.

DFUs (includes a 4" water meter typical for this size building)	$90,000
Right-of-Way Use Permit for work in the r/w	$5,000
Transportation Right-of-way Use Permit for lane, trail or sidewalk closures, parking meter removals (for all building and utility-related construction)	$150,000
Civil Engineering Plan Review and approval (for all building and utility related development)	$30,000
Typical public infrastructure improvements based on building in similar County location include site-specific water, sewer, storm, curb, gutter, sidewalk, streetlights, and street trees	$400,000
Public improvement bond processing fees (for all public infrastructure)	$2,500
Total cost estimate for Utilities, and Right-of-Way	**$677,500** **~$700,000**

Notional costs for all utility, right-of-way costs on an arterial for a 300,000-square-foot office building are listed above.

In the South District, there are three sanitary sewer components where capacity must be taken into consideration:
- Local City-owned sanitary collector sewers
- Alexandria Renew Enterprises (AlexRenew) interceptor sewer
- AlexRenew wastewater treatment facility

Staff analysis indicates there will be sufficient capacity in the interceptor sewer and at wastewater treatment facility to handle the additional flows from this project with implementation of planned projects. Capacity of the local City-owned sewers is determined at the development site plan (DSP)/development special use permit (DSUP) stage.

Impact Fee:
There are no impact fees associated with any of the District Sites.

Extension of sewage line(s):
This is determined on a site-specific basis for a develop project and related to the distance required to connect to an existing adjacent sewer main in the street. This cost is generally born by the developer. Local/onsite collector sewers will need to be analyzed and sized appropriately as part of the development plan.

Installation of wastewater line(s):
This is determined on a site-specific basis for a development project and is incorporated into the overall development project cost. Local/onsite collector sewers will need to be analyzed and sized appropriately as part of the development plan.

Tap Fee(s):
In the North and Central Districts, tap fees are based on DFUs.

In the South District, developments are subject to the City's sanitary sewer connection (tap) fees that are required for all connections to the sanitary sewer system. Sanitary sewer tap fees are adjusted on an annual basis and published through a Memorandum to Industry (see link below).
https://www.dropbox.com/home/Cooper/National%20Landing%20Real%20Estate%20Attachments?preview=Alexandria+Sanitary+Sewer+Tap+Fees.pdf

Other relevant fees and assessments:
None.

Real Estate | Utilities | Cost: Electricity

E3. Electricity: Please provide name of service provider, distance to Site, if dual feed available, capacity of line and system (including peak usage), and any capital improvements planned.
E3.a. What is the expected proportion of renewable energy in the utility's generation mix over the next 20 years?
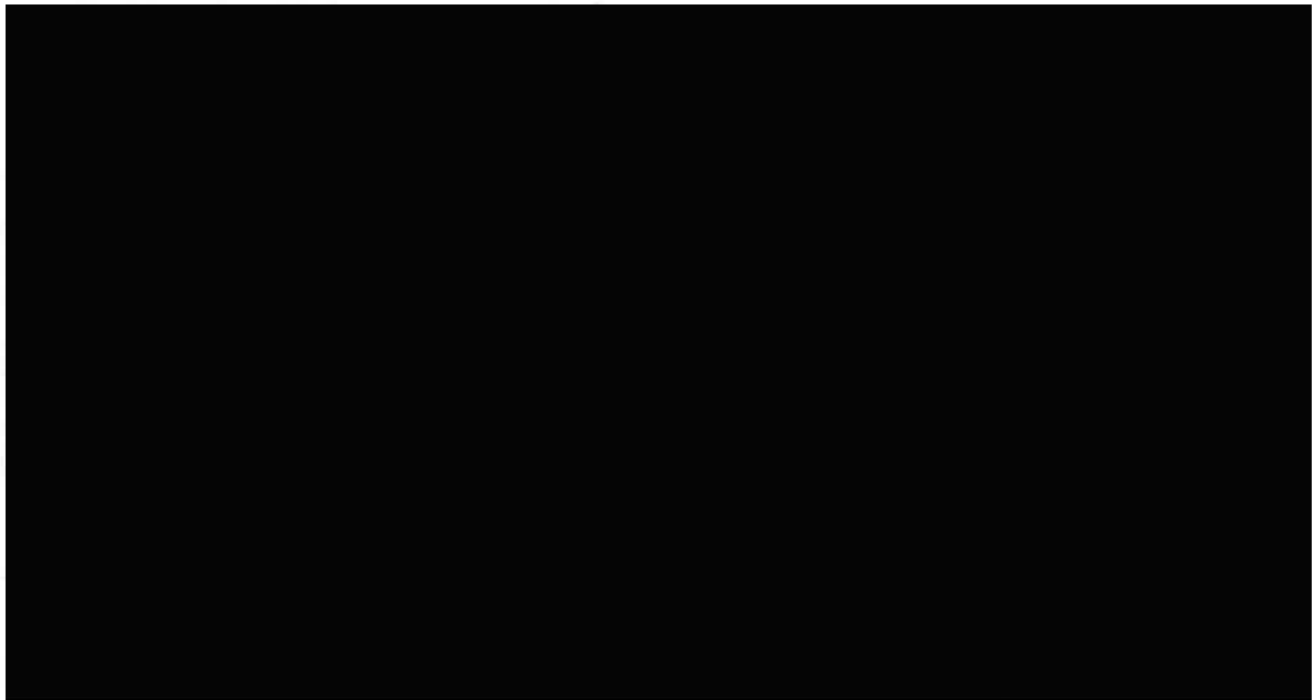E3.c. What options are currently available to purchase power at Site on the open market?
E3.d. What is the cost per kWh?

Dominion Energy is the service provider.

Dominion is a regulated monopoly serving Virginia. Electric service provided by Dominion is already available at National Landing. The utility is headquartered in Richmond (108 miles away), with a regional operations center in Herndon (27 miles away), and a local operations office for repairs and construction in Alexandria (4 miles away).

- Dual feed, if not already available, can be provided by Dominion Energy at any of these Sites. Dominion is happy to discuss specifics regarding alternate feeds with the customer once a specific Site is identified and more details about the site plan are finalized.

- Capacity of line and system: Dominion does not have any capacity concerns in this area and will be happy to discuss specific site needs with the customer as a final location is identified.

- Dominion Energy routinely evaluates need for capital improvements in our system and is constantly upgrading areas of need. There is also new legislation, The Grid Transformation and Security Act, that is being reviewed at the state level with provisions to further upgrade and modernize the electric grid.

According to Dominion's 2017 Integrated Resource Plan (IRP), the company forecasts between 5,280 and 5,760 MW of renewables in 2035 (18 years from now).

These amounts represent 22-24% of Dominion's projected total capacity of 24,244 MW in 2035.

The Arlington County Community Energy Plan, an element of the County's Comprehensive Plan, set a target for 160 MW of solar electric capacity installed within its borders, with many residential, commercial, and institutional purchases in the queue, including power purchase agreements.

Alexandria's Eco-City Environmental Action Plan establishes a goal of 50% of the City's energy portfolio to consist of clean renewable energy sources by 2030.

Options are readily available for 100% renewable energy through Dominion Energy on their 100% renewable tariff, and through the power purchase agreements, both physical and virtual.

Amazon already has such arrangements with Dominion and others in Virginia.
Dominion Energy Virginia currently offers the following programs for renewable energy rates and programs:

Solar Partnership Program (SPP)
The SPP is a demonstration program in which the Company is authorized to construct and operate up to 30 MW (DC) of Company-owned solar DG facilities on leased commercial and industrial customer property and in community settings. This is intended as a five-year demonstration program to study the benefits and impacts of solar DG on targeted distribution circuits. More information can be found on the SCC website under Case No. PUE-2011-00117 and on the Company's website: https://www.dom.com/large-business/renewable-energy-programs/solar-partnership-program.

Green Power Program®
The Company's Green Power Program® allows customers to promote renewable energy by purchasing, through the Company, RECs in discrete blocks equal to 100% of their usage or a portion of their usage. The Company purchases and retires RECs on behalf of participants. More information can be found on the SCC website under Case No. PUE-2008-00044 and on the Company's website: https://www.dom.com/home-and-small-business/ways-to-save/renewable-energy-programs/dominion-green-power.

Renewable Energy (Third-Party PPA) Pilot
The Renewable Energy Pilot Program allows qualified customers to enter into a Power Purchase Agreement (PPA) with a third-party renewable energy supplier. The energy supplied must come from a wind or solar generator located on the customer's premise. More information can be found on the SCC website under Case No. PUE-2013-00045 and on the Company's website: https://www.dom.com/large-business/renewable-energy-programs/renewable-energy-pilot-program.

Net Metering
Net Metering allows for eligible customer generators producing renewable generation to offset their own electricity usage consistent with Va. Code § 56-594 and SCC regulations governing net metering in the Virginia Administrative Code (20 VAC 5-315-10 et seq.) and on the Company's website: https://www.dom.com/home-and-small-business/ways-to-save/renewable-energy-programs/net-metering

Offsite physical, virtual/synthetic utility-scale solar or wind renewable energy generation sources may be available as outlined in Renewable Energy Buyers Alliance.
The Project Site may have opportunity to generate onsite renewable energy up to approximately 5-10% of total electrical needs.

District energy, geothermal exchange, multi-generation micro grid, and battery storage opportunities may be available for onsite renewable energy or equivalent generation to meet Site loads.

Dominion Energy Virginia currently offers a Market-Based Rate Pilot on a voluntary, experimental basis as MBR Rate Schedules.

The MBR Rate Schedules will reflect market-based pricing for generation service in the PJM wholesale market. The MBR Rate Schedules will be billed as companion rate schedules to the Company's traditional Rate Schedules GS-3 and GS-4.

The average cost per kWh for the commercial facility will vary with the amount of energy use, the peak demand by the customer, and the variability of demand ('load factor').

Consistent energy use with a flat peak is ideal for low-cost operation. Here are three examples for scale:

1. A large County industrial facility with peak demand of 4.4 MW using 29.4 million kWh in 2017 had an average electricity price of $0.055

2. A large County office building with peak demand of 1.1 MW using 5.4 million kWh in 2017 had an average electricity price of $0.072.

3. One large, multi-unit residential property with peak demand of 520 kW using 2.7 million kWh in 2014 had an average electricity price of $0.064. This was on rate schedule GS-3.

Real Estate | Utilities | Cost

E4. Natural Gas: Please provide name of service provider, distance to Site, line size, capacity of line and system, and any capital improvements planned. Include any costs to the Project.

For National Landing, Washington Gas has an existing healthy distribution system as well as a transmission line in the vicinity.

Using the assumed 300,000-square-foot office building size, the existing infrastructure in the area mentioned above has the capability to supply this proposed load. All Sites have healthy system capacities for future development and do not require any system improvements based on the provided information.

For phases of development that are using existing buildings that are not being upgraded, Washington Gas would conduct an analysis to see if the existing service line can handle the assumed potential new load. If not, a service line upgrade would be required, which will include the costs of installing the new service line, abandoning existing service line, installation of a meter build-up, and permit fees.

For any new buildings or upgrades to existing buildings, the cost to serve customer fees, is based on a cost vs. revenue model which is utilized to determine if the net present value (NPV) over 30 years is either positive, zero, or negative. If the NPV is positive or zero, Washington Gas serves the customer without any costs associated to the project; however, if the NPV is negative, Washington Gas bills the customer for all costs that are associated with that specific project. Additionally, if the main pipeline is in the ROW, the new construction would be handled on a site-specific basis; since the gas pipeline infrastructure is currently existing in the area, then all that would be needed is the approach main and service line to the new building.

Real Estate | Utilities | Telecommunication & Broadband

E5.a. Provider(s) - Name and describe providers of telecommunications (including cellular coverage) services to Site, and all high-speed data links available to Site.
E5.b. Fiber maps/routes
E5.c. Estimated cost of dark fiber lease/ownership
E5.d. Is any telecommunication license required for dark fiber install or use?
E5.e. Process to install new fiber lines to reach Site

National Landing has an extensive network of telecommunications and broadband infrastructure that businesses and residents appreciate.

There is more than significant telecommunications infrastructure and suppliers that serve the National Landing Site. Suppliers vary by size, services, and customer service. National Landing is connected to the overall dark fiber network that serves the numerous data centers to the west in nearby localities.

Never experience a dropped call in National Landing.

Wireless coverage blankets the entire Site and numerous carriers offer products and services. Verizon is the incumbent local exchange carrier offering a full range of services, including metro Ethernet, private circuits, Public switched telephone networking, and fiber to the home (FiOS), including cable TV, telephone, and internet. Comcast is the incumbent cable TV franchise holder, offering a full range of services, including metro Ethernet, Public switched telephone, networking, and high-capacity, fiber-based business services.

Verizon Wireless, AT&T Wireless, Sprint Wireless, and T-Mobile Wireless all provide full 4G/LTE wireless coverage in National Landing and the Northern Virginia region.

Next to common carriers like Verizon and Comcast, **ConnectArlington** is a County-owned, operated, and managed deep fiber network that has been in operation for over five years. It currently connects all County offices, schools, libraries, and public safety radio towers. It also offers connection points to internet2 providers, and a peering point to the QUILT nationwide network made up of internet aggregators via a Tera pop link to aggregators such as University of Maryland Mid-Atlantic Crossroads (UMDMAX) and Mid-Atlantic Research Infrastructure Alliance (MARIA).

In addition to the ConnectArlington network, National Landing has access to more than 20 providers that can deliver fiber connectivity and offer a wide range of high-capacity services, and access to regional assets such as a myriad of data centers (i.e. Equinix and Amazon Web Services). A list of providers is below:

- **AiNET & AiNET Dark**
  AiNET is a fully integrated fiber engineering and construction company with thousands of fiber miles of capacity in the MD/DC/VA area. It operates its own 24/7/365 Secure Network Operations Center and meet all FISMA certification and accreditation requirements. All AiNET services are available lit, dark, or available for interconnection to AiNET data centers or the >1200 carrier partners we have. AiNET's services are available on GSA Schedule 70.

- **Atlantech Online**
  Atlantech Online, Inc. is a telephone and internet service provider headquartered in Silver Spring, MD. The company provides telephone service, hosted phone service, high-speed internet connectivity services (T1, DS3, EoC, Ethernet and DSL), data networking services, website hosting, dedicated and managed server hosting, and collocation services. Atlantech owns and operates two data centers in the Washington, D.C. area. Atlantech's 800 Gigabit per second fiber backbone has the scale to support a wide variety of telecommunications solutions as its customers networks evolve.

- **Atlantic Broadband**
  Atlantic Broadband is a TV, internet, and phone service provider on a mission to deliver compelling, flexible, and reliable services plus amazing local support to the residential and business communities it serves. Atlantic Broadband, a wholly owned subsidiary of Cogeco Communications Inc., is the 9th-largest cable operator in the United States, based on the number of television service customers served.

- **Century Link Metro**
  CenturyLink is a multinational communications company headquartered in Monroe, Louisiana. It provides communications and data services to residential, business, governmental, and wholesale customers.

- **FiberLight**
  FiberLight's best-of-breed Ethernet technology is built over its wholly owned $1-billion diversely constructed optical ring topology network covering growing metros in the South, Southwest, and Mid-Atlantic regions. Companies seeking mission critical, high-performance network services, including Ethernet, Wavelengths, Dedicated IP, SONET, and Dark Fiber turn to FiberLight for customized solutions. FiberLight delivers scalability, low latency, redundancy, limitless bandwidth, and secure transport to major commercial hubs, data centers, collocations, LANs, WANs, and cloud-enabled services.

- **Level3 Metro**
  Level 3 Communications is an American multinational telecommunications and internet service provider company headquartered in Broomfield, Colorado. It operates a Tier 1 network.

- **Lightower & Lightower Leased**
  Lightower is a premier service provider of dark fiber and advanced network services including Ethernet, Wavelength, Dark Fiber, IP, SONET, and more.

- **LIT Networks**
  LIT Networks is a partnership of seven regional fiber networks from Virginia to Georgia that provides seamless optical transport to the major peering points in the southeast. This unique partnership of regional networks offers a high level of diversity for enterprise customers looking to connect with U.S. carriers, international carriers, and wireless tower sites. LIT Networks is a dark fiber network that uses a common transport platform, which increases the value of its member networks by extending their ability to reach unserved and underserved markets.

- **Lumos**
  Lumos Networks is a fiber-based communications service provider in the Mid-Atlantic region. It serves carriers and businesses over a 5,800 route-mile fiber network with connectivity to LSOs and IXC POPs. TDM and Ethernet transport services - MEF Certified - FTTC Services.

- **Maryland Broadband Cooperative**
  The Maryland Broadband Cooperative is a nonprofit (c)(12) charged with offering, through its membership, expanded and world-class network services around the state. It works in partnership with over 70 members who provide "last-mile services" to consumers, to expand the broadband footprint all across Maryland and the Mid-Atlantic region.

- **Metropolitan Network Services**
  Metropolitan Network Services offers dark fiber and Ethernet services in and around the Arlington County, Virginia area. The network is comprised of three sections all located within the Northern Virginia region: Rosslyn, Ballston, and the City of Alexandria. All locations can easily be connected to all of the major communication carriers in the area.

- **NOVEC**
  For more than 60 years, NOVEC and its predecessor organizations have provided electricity and energy services to homes throughout Northern Virginia. Many of its customer-owners work in the metropolitan Washington, D.C. area, and demand a very high level of sophisticated services and unwavering reliability. NOVEC values customers' input and use the feedback to develop corporate goals, identify needed improvements, and measure our success.

- **One Maryland ICBN**
  With a mission to make Maryland the most wired and connected state in the nation, the One Maryland broadband initiative has installed more than a thousand miles of fiber optics and related electronics to create a single statewide cloud network.

- **RCN**
  RCN Business is a facilities-based provider that offers extensive fiber density with redundancy and superior performance. Spanning over 6,000 miles, the advanced fiber-rich network is completely diverse from other communications providers, enabling businesses to experience exceptional customer service, quicker installation, and issue resolution. RCN Business received the Metro Ethernet Forum's CE 2.0 certification in the E-Line, E-LAN, and E-Access categories in 2014. RCN Business operates on three fundamental tenets: partnership, choice, and technology. These fundamental tenets guide how RCN Business approaches the sales process, addresses its customers, and supports its products and services.

- **Shentel**

  Shentel provides low-latency fiber optic transport and internet solutions from 5 MB through 100 GB on a wholly owned network. Our services include: Dedicated Internet Access with multiple peers in Ashburn and Atlanta, Ethernet Private Line, Ethernet Virtual Private Line, Tower Collocation Leasing, Dark Fiber Leases, IRUs, and "Swaps." Shentel's NOC is staffed 24/7 and offers weekly usage statistics.

- **SummitIG**

  SummitIG is the next generation of custom network solutions and bandwidth infrastructure providers. Specializing in dark fiber networks, it provides customers with the flexibility they desire and the control over network connectivity costs they require. By providing data centers operators, carriers, and enterprise businesses dark fiber solutions, the company makes it possible for operators to not only offer space and power but also connectivity beyond their own building to multiple points along its network. From carrier neutral facilities to those run by data center operators to long haul carrier POPs, SummitIG provide customers with infrastructure at any point along the way.

- **Sunesys**

  Sunesys is a leading provider of premium bandwidth services and private fiber optic networks. The company owns, operates, and maintains its own high-density fiber optic network in major metropolitan areas across more than 30 states in the U.S. Sunesys offers a comprehensive suite of tailored, high-capacity, facilities-based network services coupled with superior industry expertise, service, and support.

- **United Fiber and Data**

  United Fiber and Data provides a superior alternative for fiber networking and broadband solutions. With its completely privately owned and operated network that is strategically positioned west of the Northeast corridor's traditional route, UFD is diverse to single points of failure between New York City and Northern Virginia. United Fiber and Data's data centers offer a cost-effective delivery of ISP bandwidth and carrier interconnects for customers. The company's hands-on Professional Services Group offers a complete suite of solutions that has the backing of an owner-operated, highly redundant, and secure infrastructure.

- **Uniti Fiber & Uniti Fiber – UC**

  Uniti Fiber is a leading provider of infrastructure solutions, including cell site backhaul and small cell for wireless operators, and Ethernet, Wavelengths, and Dark Fiber for telecom carriers and enterprises. Whether the challenge is improving network reach and quality, increasing capacity, or maintaining cost certainty for the future, Uniti Fiber delivers a custom-designed, technology-agnostic and access-agnostic solution. Uniti Fiber's growing infrastructure spans 1,300,000 fiber strand miles and connects over 16,300 customer locations with local access to over 2,600 municipalities and dozens of utilities, enabling Uniti Fiber to deliver its customized solutions wherever its customers' toughest challenges exist.

- **USA Fiber – UC**

  We provide purpose built, high-capacity dark fiber networks that are application and carrier neutral. This enables its clients to connect with their applications and their customers, on their own terms.

- **Verizon Business – Field Project Data**

Verizon is a global leader delivering innovative communications and technology solutions that improve the way our customers live, work, and play.

- **Windstream**
  Windstream Corp. (Nasdaq: WIN) is the 4th-largest enterprise-focused communications and technology company. It is a leading provider of advanced network communications, including cloud computing and managed services, to businesses nationwide. Windstream has more than 115,000 miles of fiber nationwide.

- **XO Communications**
  XO Communications is a leading provider of advanced IP communications, managed network, and IT infrastructure services for business, government, and wholesale customers. Its customers include more than half of the Fortune 500 and leading cable companies, carriers, and mobile network operators. With more than one million metro fiber miles and a 19,000 route-mile inter-city network, XO Communications offers customers services in more than 85 metropolitan markets across the United States.

- **YellowFiber**
  YellowFiber is a metro transit provider with a global reach. With presence in 12 major U.S. markets YellowFiber can leverage its all Optical Network to deliver high-bandwidth solutions. YellowFiber offers transport speeds from 10Mbps to 10 GW, and can deliver customized solutions from your office to the cloud. IP, MPLS, or simple transport can be used to sync remote offices, remote employees, or deploy a business continuity solution. With emerging technologies and applications, YellowFiber is the partner of choice offering scalable connectivity solutions for your business.

- **Zayo Metro & Zayo Planned Routes**
  Zayo Group (NYSE: ZAYO) provides Communications Infrastructure services, including fiber and bandwidth connectivity, colocation, and cloud services to the world's leading businesses. Customers include wireless and wireline carriers, media and content companies, and finance, healthcare, and other large enterprises.

National Landing North Robust Fiber Network
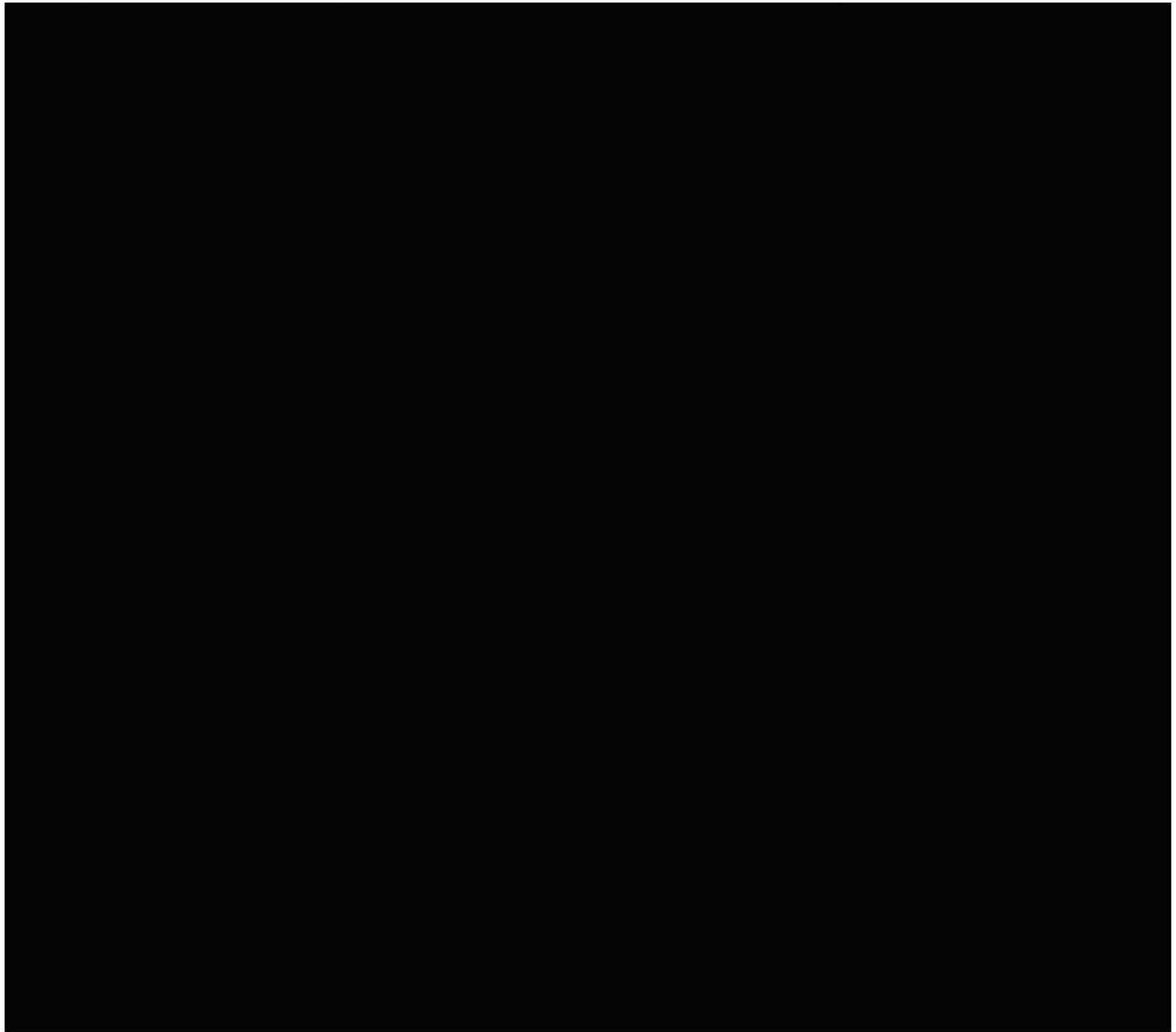
National Landing Central Robust Fiber Network
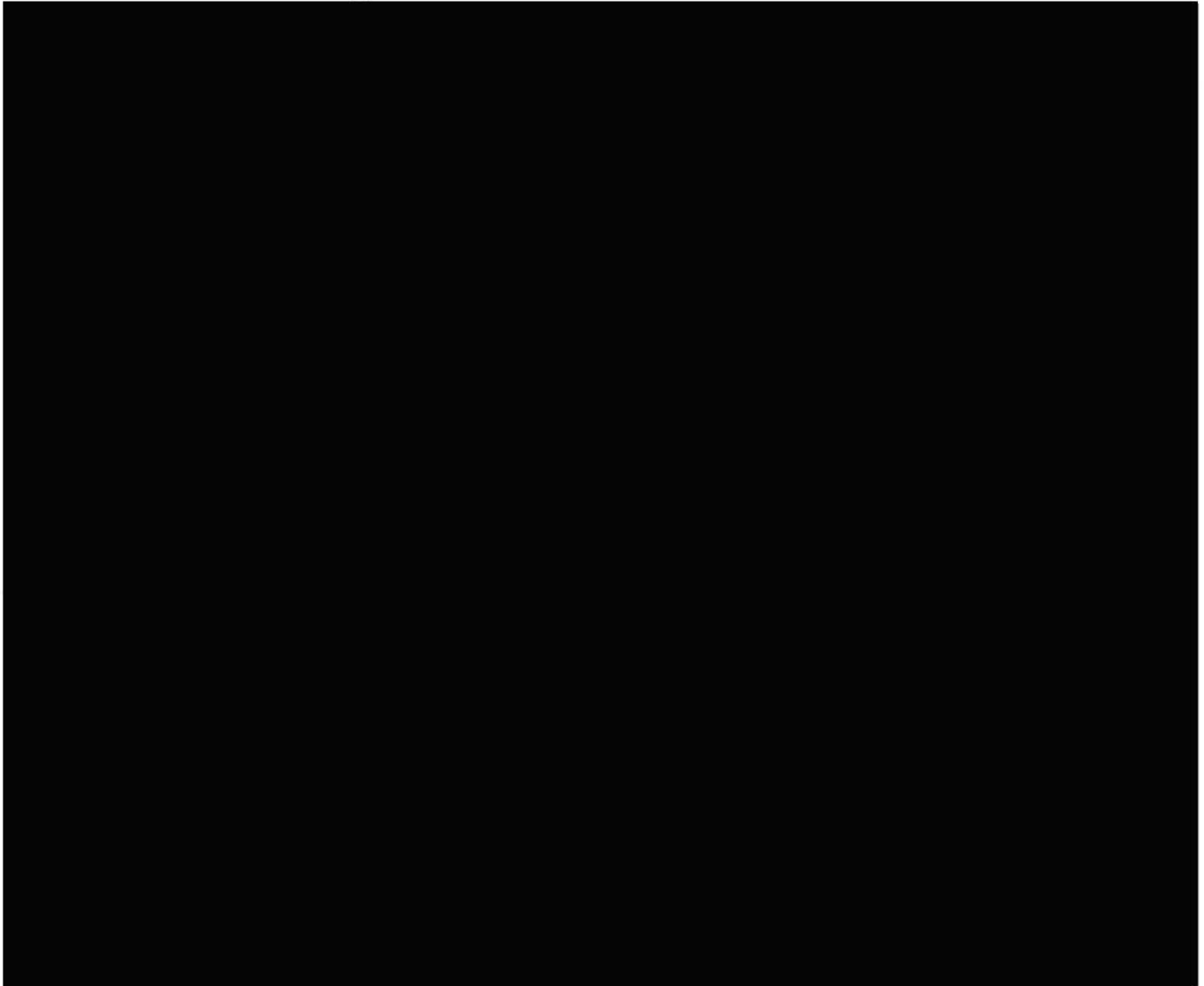
National Landing South Robust Fiber Network

Robust Regional Fiber Network

Estimated cost of dark fiber lease/ownership:
ConnectArlington - A license/lease is required to use the ConnectArlington fiber. The County is prepared to streamline the application and licensing process for this.

Other providers: With 25 private providers already offering service in the area, cost of dark fiber lease and/or ownership varies.
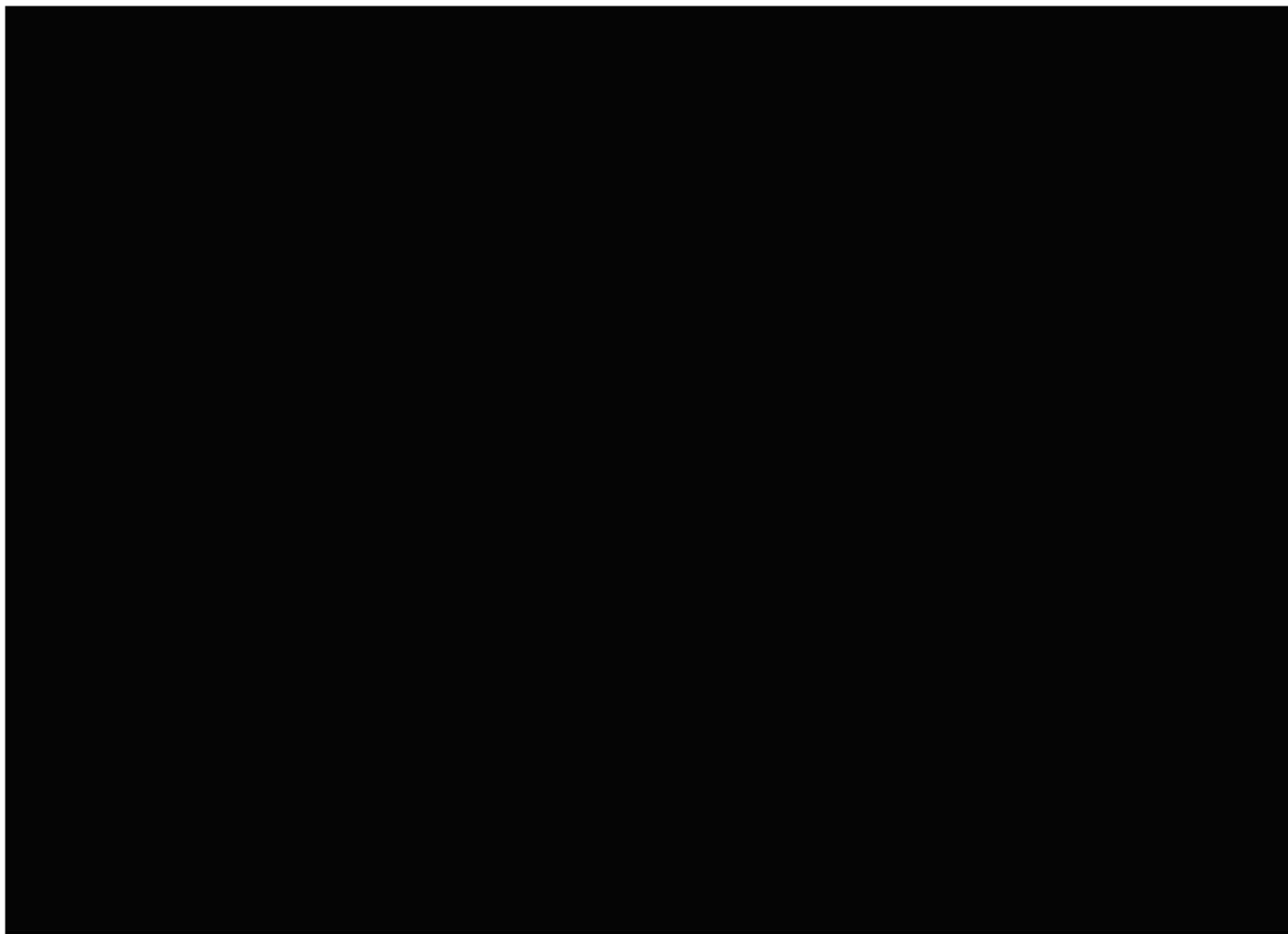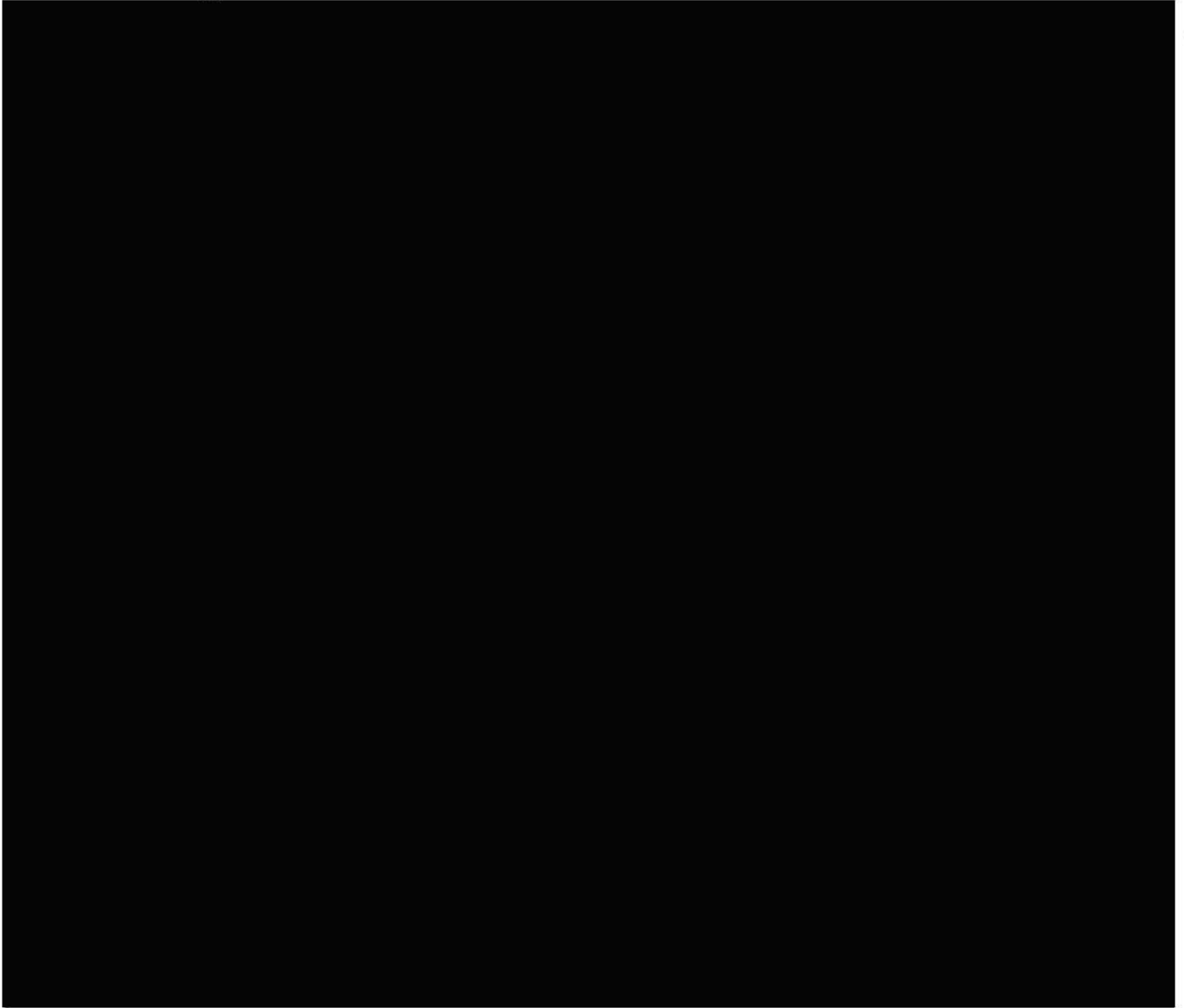
Only providers who are categorized as a "public utility" and are registered with the Virginia SCC may install in the public right of way. Any construction on private property, not in the public right of way, requires a construction permit.

Providers (SCC registered) who already have available dark fiber in the area generally lease this fiber via an agreement. All costs associated with the leasing of fiber exclusive of the one-time installation costs are generally included in this cost.

Process to install new fiber lines to reach National Landing:
ConnectArlington – requires the construction of a lateral from their requested endpoints to the designated County connection points (hand hole or splice enclosure).

Excavation permits are required for installation of new utilities in the public right-of-way as well as consultation with Miss Utility (call 811). The permit process coordinate with Traffic Control for underground traffic conduit locations and Sewer Maintenance for sewer locations.

F1.a. Nearest Airport: name, distance to Site, number of passenger carrier service providers. Also include any planned, funded and approved capital improvements to the airport.
F1.b. Detail daily scheduled service, including flights to Seattle, New York City, San Francisco/Bay Area, and Washington, D.C.
F1.c. Next nearest Airport

With an airport, three Metro stations, 20 Capital Bikeshare stations, miles of bike and walking trails, a commuter rail station, and a dedicated express transit network, National Landing's extensive transportation networks connect neighborhoods internally and is easily accessible from D.C., as well as the far-reaching suburbs in Virginia and Maryland.

Amazon employees looking for entertainment will be within a few minutes' bike ride or a couple of Metro stops to the iconic landmarks, attractions, and culture of the nation's capital. On the business front, Amazon will be just minutes from the companies, legislators, regulators, and international representatives—something that only the Washington, D.C. area can offer.

National Landing is served by three major airports, all among the top 100 worldwide in commercial passengers.

- Washington Dulles International Airport ("Dulles")
- Ronald Reagan Washington National Airport ("National")
- Baltimore Washington International Airport ("BWI")

Metrorail provides existing service to National on the Blue and Yellow Lines and will begin serving Dulles in 2020 via the Silver Line. BWI is accessible via the Metrorail, which connects to Amtrak.

National Airport is within walking distance of National Landing, 0.3 miles from the corner of 18th Street and Crystal Drive. Via Metrorail, National is a two-minute Blue or Yellow Line ride from the Crystal City station and a four-minute ride from the Pentagon City station, and it will be one stop away from the new infill Potomac Yard station.

Dulles Airport is currently accessible via the Silver Line/Silver Line Express Bus as well as Washington Flyer Bus, with full Metrorail service beginning in 2020.

BWI Airport is currently accessible via Metrorail which connects to directly to Amtrak at Washington's Union Station or Alexandria's King Street Station, and Metrobus from Metrorail's Greenbelt station.

Arlington is advancing an environmental study of a direct pedestrian bridge connecting National Airport's Main Terminal to the National Landing Site, including Crystal City, VRE, and Metrorail.

Located in Arlington County, National Airport is 0.3 miles to National Landing and has 10 passenger carrier service providers, providing 416 daily departures to 95 domestic and international locations.

Daily nonstop flight schedules include an average of two flights to Seattle, 33 flights to New York City, and two flights to San Francisco.

Significant planned improvements to Reagan National Airport:

- Project Journey: a $1 billion, multi-year project that includes construction of two new security checkpoints that fully connect the concourse level of Terminal B/C to airline gate areas, buildout of an enclosed commuter concourse to replace the 14 outdoor gates currently serviced by buses from gate 35X, and future improvements to roadway and parking configurations.
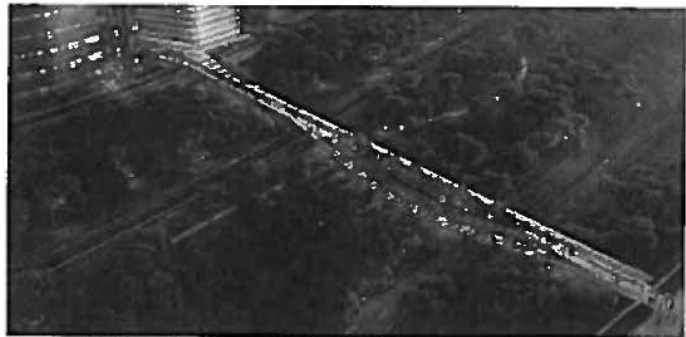
Proposed National Landing-to-National Airport pedestrian bridge.

Daily scheduled service, including flights to Seattle, New York City, San Francisco/Bay Area, and Washington, D.C.:

From National:
Daily nonstop flight schedules include an average of two flights to Seattle, 33 flights to New York City, and two flights to San Francisco. This link provides more detail on flights from National, including time of day and airline information.
http://www.flyreagan.com/dca/flight-guide

From second-closest airport(s):
From Dulles
Daily nonstop flight schedules include an average of five flights to Seattle, 16 flights to New York City, and 12 flights to San Francisco. This link provides more detail on flights from Dulles, including time of day and airline information:
http://www.flydulles.com/iad/flight-guide

From BWI
Daily nonstop flight schedules include an average of three flights to Seattle, eight flights to New York City, and seven flights to San Francisco, Oakland, and San Jose. This link provides more detail on flights from BWI, including time of day and airline information. *https://www.bwiairport.com/flying-with-us/flights*

DEPARTURES FROM RONALD REAGAN NATIONAL AIRPORT
Weekly flight schedules to select cities (based on July 2018 flight schedules)

Flights to New York City

DCA to EWR 198 Miles ~1h 5m 2 Airlines

Airline	Flight #	Depart DCA	Arrive EWR	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	4348	6:55 AM	8:00 AM	•	•	•	•	•	•		Y
United	4241	8:30 AM	9:32 AM	•	•	•	•	•		•	Y
United	4281	11:00 AM	12:07 PM	•	•	•	•	•	•	•	Y
United	4402	2:36 PM	3:52 PM	•	•	•	•	•	•	•	Y
United	4049	5:00 PM	6:09 PM	•	•	•	•	•	•	•	
United	4254	5:45 PM	7:09 PM	•	•	•	•	•	•	•	
United	4195	6:59 PM	8:06 PM	•	•	•	•	•		•	
United	4081	9:30 PM	10:43 PM	•	•	•	•	•		•	

DCA to JFK 212 Miles ~1h 31m 18 Airlines

Airline	Flight #	Depart DCA	Arrive JFK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	5877	6:00 AM	7:16 AM	•	•	•	•	•	•	•	Y
Delta	5878	9:00 AM	10:15 AM	•	•	•	•	•	•	•	Y
Aerolineas Argentinas	7029	10:00 AM	11:15 AM	•	•	•	•	•	•	•	
Delta	5904	11:00 AM	12:17 PM	•	•	•	•	•		•	Y
American Airlines	4332	12:50 PM	2:21 PM	•	•	•	•	•	•	•	Y
Delta	5951	2:00 PM	3:30 PM	•	•	•	•	•	•	•	Y
American Airlines	4735	2:55 PM	4:11 PM	•	•	•	•	•	•	•	Y
Delta	5896	5:07 PM	6:45 PM	•	•	•	•	•	•	•	Y
American Airlines	252	5:50 PM	7:33 PM	•	•	•	•	•	•	•	Y
American Airlines	4350	6:51 PM	8:15 PM	•	•	•	•	•	•	•	Y

DCA to LGA 214 miles ~1h 04m 2 Airlines

Airline	Flight #	Depart DCA	Arrive LGA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta/American Airlines	6132/4756	6:00 AM	7:06 AM	•	•	•	•	•			Y
Delta/American Airlines	6134/2144	7:00 AM	8:16 AM	•	•	•	•	•			Y
Delta/American Airlines	6136/2125	8:00 AM	9:32 AM	•	•	•	•	•	•		Y
Delta/American Airlines	6138/4755	9:00 AM	10:32 AM	•	•	•	•	•	•	•	Y
American Airlines	4757	10:00 AM	11:25 AM	•	•	•	•	•	•		
Delta	6140	11:00 AM	12:19 PM	•	•	•	•	•	•	•	
American Airlines	2135	12:00 PM	1:15 PM	•	•	•	•	•	•	•	
Delta	6142	1:00 PM	2:16 PM	•	•	•	•	•	•	•	
Delta/American Airlines	6144/4767	2:00 PM	3:22 PM	•	•	•	•	•	•	•	Y
Delta/American Airlines	6146/4750	3:00 PM	4:21 PM	•	•	•	•	•		•	Y
Delta	6148	4:00 PM	5:34 PM	•	•	•	•	•		•	Y
Delta/American Airlines	6150/4764	5:00 PM	6:23 PM	•	•	•	•	•		•	Y
American Airlines	6152/4752	6:00 PM	7:20 PM	•	•	•	•	•		•	Y
Delta/American Airlines	6154/4753	7:00 PM	8:20 PM	•	•	•	•	•		•	Y
American Airlines	2117	10:00 PM	11:04 PM	•	•	•	•	•		•	

Flights to Seattle

DCA to SEA 2,321 miles ~5h 45m 2 Airlines

Airline	Flight #	Depart DCA	Arrive SEA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Alaska Airlines	1	8:00 AM	10:45 AM	•	•	•	•	•	•	•	Y
Alaska Airlines	3	6:40 PM	9:25 PM	•	•	•	•	•	•	•	

Flights to San Francisco

DCA to SFO 2,435 miles ~5h 59m 3 Airlines

Airline	Flight #	Depart DCA	Arrive SFO	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	2042	8:30 AM	11:35 AM	•	•	•	•	•		•	
Alaska Airlines	1002	5:30 PM	8:29 PM	•	•	•	•	•	•	•	Y

DEPARTURES FROM DULLES INTERNATIONAL AIRPORT
Weekly flight schedules to select cities (based on July 2018 flight schedules)

Flights to New York City

IAD to EWR   211 Miles   ~1h 32m   6 Airlines

Airline	Flight #	Depart IAD	Arrive EWR	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	4933	6:00 AM	7:31 AM	•	•	•	•	•	•	•	
United	2250	8:15 AM	9:46 AM	•	•	•	•	•	•	•	Y
United	1811	12:32 PM	2:21 PM	•	•	•	•	•	•	•	Y
United	1972	5:20 PM	6:52 PM	•	•	•	•	•	•	•	Y
United	4965	7:14 PM	8:42 PM	•	•	•	•	•	•	•	
United	965	10:00 PM	11:29 PM	•	•	•	•	•	•	•	Y

IAD to JFK   227 Miles   ~1h 28m   22 Airlines

Airline	Flight #	Depart IAD	Arrive JFK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	4064	6:00 AM	7:28 AM	•	•	•	•	•	•	•	Y
JetBlue	1208	6:30 AM	7:44 AM	•	•	•	•	•	•	•	Y
Delta	3966	10:00 AM	11:14 AM	•	•	•	•	•	•	•	Y
JetBlue	1308	11:29 AM	12:44 PM	•	•	•	•	•	•	•	Y
Delta	3959	4:20 PM	5:53 PM	•	•	•	•	•	•	•	Y
JetBlue	1808	8:27 PM	9:59 PM	•	•	•	•	•	•	•	Y

IAD to LGA   228 miles   ~1h 17m   4 Airlines

Airline	Flight #	Depart IAD	Arrive LGA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	6255	8:15 AM	9:31 AM	•	•	•	•	•	•	•	Y
United	6055	12:35 PM	1:49 PM	•	•	•	•	•	•	•	Y
United	6334	5:08 PM	6:25 PM	•	•	•	•	•	•	•	Y
United	6337	10:05 PM	11:22 PM	•	•	•	•	•	•	•	Y

Flights to Seattle

IAD to SEA   2,298 miles   ~5h 55m   11 Airlines

Airline	Flight #	Depart IAD	Arrive SEA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	1838	7:05 AM	9:55 AM	•	•	•	•	•	•	•	
United	389	8:36 AM	11:07 AM	•	•	•	•	•	•	•	Y
Alaska Airlines	859	9:20 AM	12:15 PM	•	•	•	•	•	•	•	
United	357	12:36 PM	3:15 PM	•	•	•	•	•	•	•	
United	326	5:37 PM	8:12 PM	•	•	•	•	•	•	•	Y

Flights to San Francisco

IAD to SFO   2,412 miles   ~5h 52m   14 Airlines

Airline	Flight #	Depart IAD	Arrive SFO	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Alaska Airlines	1069	6:20 AM	9:05 AM	•	•	•	•	•	•	•	Y
United	1881	6:48 AM	9:40 AM	•	•	•	•	•	•	•	Y
United	424	8:18 AM	11:10 AM	•	•	•	•	•	•	•	Y
United	1763	9:15 AM	12:07 PM	•	•	•	•	•	•	•	Y
Alaska Airlines	1071	9:50 AM	12:30 PM	•	•	•	•	•	•	•	Y
United	525	12:40 PM	3:30 PM	•	•	•	•	•	•	•	Y
United	560	3:47 PM	6:24 PM	•	•	•	•	•	•	•	Y
United	340	5:16 PM	8:11 PM	•	•	•	•	•	•	•	Y
Alaska Airlines	1077	6:30 PM	9:25 PM	•	•	•	•	•		•	Y
United	1893	7:01 PM	9:55 PM	•	•	•	•	•	•	•	Y
United	2274	7:54 PM	10:39 PM	•	•	•	•	•	•	•	Y
United	225	10:00 PM	1:01 AM	•	•	•	•	•	•	•	Y

DEPARTURES FROM BALTIMORE-WASHINGTON INTERNATIONAL AIRPORT
Weekly flight schedules to select cities (based on July 2018 flight schedules)

Flights to New York City

BWI to EWR   169 Miles   ~1h 20m   3 Airlines

Airline	Flight #	Depart BWI	Arrive EWR	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	4067	6:00 AM	7:07 AM	•	•	•	•	•	•	•	
United	4100	10:42 AM	11:50 AM	•	•	•	•	•	•	•	Y
United	4373	2:40 PM	4:10 PM	•	•	•	•	•	•	•	Y
United	4433	4:51 PM	6:11 PM	•	•	•	•	•	•	•	Y

BWI to JFK   183 Miles   ~1h 23m   17 Airlines

Airline	Flight #	Depart BWI	Arrive JFK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Delta	3431	6:35 AM	7:53 AM	•	•	•	•	•	•	•	Y
Delta	3612	10:45 AM	11:56 AM	•	•	•	•	•	•	•	Y
American Airlines	4001	12:36 PM	1:52 PM	•	•	•	•	•	•	•	Y
Delta	3944	5:00 PM	6:23 PM	•	•	•	•	•	•	•	Y

Flights to Seattle

BWI to SEA   2,327 miles   ~5h 55m   3 Airlines

Airline	Flight #	Depart BWI	Arrive SEA	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Spirit Airlines	263	7:20 AM	10:06 AM	•	•	•	•	•	•	•	
Southwest	546	2:25 PM	5:15 PM	•	•	•	•	•			
Southwest	5406	2:40 PM	5:25 PM							•	
Southwest	4263	3:30 PM	6:20 PM						•		
Alaska Airlines	765	7:15 PM	10:10 PM	•	•	•	•	•	•	•	

Flights to San Francisco, San Jose, and Oakland

BWI to SFO   2,450 miles   ~6h 17m   5 Airlines

Airline	Flight #	Depart BWI	Arrive SFO	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
United	753	6:30 AM	9:47 AM	•	•	•	•	•	•	•	Y
Alaska Airlines	1127	5:25 PM	8:42 PM	•	•	•	•	•	•	•	Y
United	2059	6:55 PM	9:40 PM	•	•	•	•	•		•	Y

BWI to SJC   2,431 Miles   ~5h 50m   1 Airline

Airline	Flight #	Depart BWI	Arrive SJC	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Southwest	2276	1:30 PM	4:15 PM	•	•	•	•	•			
Southwest	4222	2:50 PM	5:35 PM							•	
Southwest	4904	3:30 PM	6:20 PM						•		

BWI to OAK   2,439 Miles   ~5h 47m   2 Airlines

Airline	Flight #	Depart BWI	Arrive OAK	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Code Share
Southwest	1613	9:00 AM	11:50 AM	•	•	•	•	•			
Southwest	5727	10:05 AM	12:50 PM						•		
Southwest	417	1:30 PM	4:20 PM	•	•	•	•	•			
Southwest	3179	2:20 PM	5:05 PM							•	
Spirit Airlines	583	3:05 PM	5:52 PM	•	•	•	•	•	•	•	
Southwest	4239	3:40 PM	6:30 PM						•		

Next nearest airport: Dulles Airport
Located in Loudoun and Fairfax Counties, Dulles is 28.4 miles to National Landing and 38 passenger carrier service providers operate through Dulles, providing 326 daily departures to 135 domestic and international locations.

Significant planned improvements to Dulles:

- Dulles Corridor Metrorail Project: a 23-mile extension of Washington's existing Metrorail System. It is being built in two phases by the Metropolitan Washington Airports Authority (MWAA). Phase 1 of the new line opened on July 26, 2014, connecting East Falls Church with Tysons and Reston, Virginia's largest employment centers, with downtown Washington and Largo, Maryland. Known as the Silver Line, the extension is operated by the Metropolitan Washington Area Transit Authority (WMATA). Preliminary construction for Phase 2 began in 2014. It will run from the eastern edge of Reston west to Dulles and to Ashburn in eastern Loudoun County. When both phases are complete, the line will provide a one-seat, no-transfer ride from Dulles to downtown Washington, creating long-sought-after connectivity between the rapidly expanding Dulles corridor and the nation's capital. The extension includes 11 new stations.

- Future Fifth Runway: space exists for an east-west runway approximately 10,500 feet long and 150 feet wide. It will be parallel to existing runway 12-30 near the south side of the Airport. Construction dates for the fifth runway will be set in the future. (Note: Land has been acquired and the runway was approved by the FAA. However, the project's funding and schedule have not been determined.)

Other nearby airport: Baltimore-Washington International Airport (BWI)
National Landing is also served by Baltimore-Washington International Airport (BWI) in Anne Arundel County, Maryland. BWI is 37.1 miles to National Landing and has 19 commercial airlines, providing 343 daily departures to 80 destinations. Daily non-stop flight schedules include an average of three flights to Seattle, eight flights to New York City, and seven flights to San Francisco, Oakland, and San Jose.

Significant planned improvements to BWI may be found here:
http://www.mdot.maryland.gov/newMDOT/Planning/CTP/CTP_18_23_Final/MAA-1 MDOT Maryland Aviation Administration.pdf

- Concourse D and E Connector Project: provides additional international airline capacity and new passenger services, including a new security checkpoint to serve domestic and international passengers (page MAA-4).

- Concourse E Expansion Project: consists of extending the international terminal by 150 feet for six additional gates (page MAA-7).

Amtrak also provides excellent intercity passenger rail connections from Northern Virginia and National Landing, particularly to destinations in the Northeast corridor (i.e., Baltimore, Philadelphia, New York City, and Boston).

More than 40 trains per day connect Alexandria's Amtrak Station to/from New York's Penn Station, and more than 100 trains per day connect New York to/from Washington's Union Station (including 30 high-speed Acela trains per day).

Real Estate | Transportation | Road

F2. Roads: describe road access to Site and any planned improvements. Include details of how employees may commute into Site via personal auto or rideshare. Use specific highway names, road names, bridges, etc.

The National Landing area has excellent roadway access and is served by both regional and local streets.

The site is directly adjacent to U.S. Route 1, providing north-south connectivity and serving other major activity centers, including Old Town Alexandria, Ronald Reagan National Airport, and downtown Washington, D.C. At the north end of the National Landing Site, Route 1 connects to I-395 which provides access between downtown Washington, D.C., and I-495, the region's "Beltway" that connects to other interstate highways that serve the Washington/Baltimore region, including I-95. Three miles to the south of National Landing, Route 1 connects again to I-495. According to the Environmental Protection Agency's Smart Location Database, between approximately 330,000 and 450,000 working-age individuals are within a 45-minute drive of the various blocks in the National Landing site.[1]

Virginia has partnered with Transurban to expand the two center reversible lanes of I-395 to three reversible HOT lanes to the 14th Street Bridge. This major project will provide increased capacity and reliability in the important regional travel corridor.

National Landing is composed of both existing urban areas and former railyards that are being transitioned to urban development. Local streets include Potomac Avenue, which is east of, and parallel to, Route 1. Potomac Avenue provides a direct connection between Crystal City in Arlington to the Potomac Yard area of Alexandria, while also helping to relieve north-south traffic volumes on Route 1. Other local streets include West Glebe Road, which provides connectivity to other neighborhoods in the northern section of Alexandria, as well as south Arlington. In the Arlington portion of the Site, the focus in Pentagon City and Crystal City is on expanding the street network through redevelopment, reducing the size of large blocks, and improving the network of facilities for pedestrians, cyclists, and transit-users. Arlington has more than $100 million of complete streets projects planned for Pentagon City, Crystal City, and Potomac Yard in its adopted 10-year Capital Improvement Program. The existing network of streets has earned Crystal City and Pentagon City "Very Walkable" Walk Scores of 84, meaning that "most errands can be accomplished on foot." Overall, Arlington County has been named a Gold Level Walk-Friendly Community by the Pedestrian and Bicycle Information Center - one of 15 communities nationwide to receive this level rating.

A well-formed street grid is currently in place within the area surrounding National Landing, which helps disperse vehicles and improve accessibility for all modes, including cars, transit, pedestrians, and bicycles. The future growth within the north Potomac Yard area anticipates an extension of the street grid to improve north-south and east-west multimodal connectivity between established neighborhoods and future growth areas in north Potomac Yard. A number of road projects are funded in the vicinity of National Landing, including intersection improvements at the intersections of Route 1 at East Glebe Road, Route 1 at East Reed Avenue, and East Reed at Swann Avenue. With future development, Potomac Avenue is planned to be an attractive multimodal corridor consisting of two vehicular lanes in each direction, dedicated transit lanes, wide sidewalks, streetscape improvements, and a bicycle facility that connects to the regional trail network. Alexandria has approximately **$5,100,000** in roadway and non-motorized related projects planned in the vicinity of the National Landing Site, which are in the City's current 10-year Capital Improvement Program. This capital

[1] https://www.epa.gov/smartgrowth/smart-location-mapping
Innovation Lives Here

investment does not reflect the planned $286,000,000 infill Potomac Yard Metrorail Station, which is explained in detail below.

As with the road system, National Landing is well-served by the regional trail network.

This Site has multiple access points to the Mount Vernon Trail, the region's most heavily used trail paralleling the Potomac River from Rosslyn to Mount Vernon. The Site is also served by the Four Mile Run Trail, and there is bicycle/pedestrian access across the 14th Street Bridge into D.C. via the Mount Vernon Trail. Crystal City, Pentagon City, and the Potomac Yard areas have "Very Bikeable" Bike Scores, which means that "biking is convenient for most trips."

In the Arlington portion of the Site, the focus is on building out a complete network of bicycle facilities on streets with bicycle lanes, protected bike lanes, and cycle tracks. Arlington has recently completed continuous bicycle facilities along the Eads Street Corridor connecting to the Four Mile Run Trail and is advancing work on a cycle track along Army Navy Drive. In Alexandria, the recently updated North Potomac Yard Small Area Plan depicts separated trail and on-street bike networks that connect Alexandria's Potomac Yard to Arlington in the north, to Del Ray and Arlandria in the west, and to existing high-quality, separated multiuse trail infrastructure that already exists in the southern and more residential part of the Potomac Yard neighborhood. The area is being recognized for its bike accessibility; Arlington County has earned Silver Level Bicycle Friendly Community designation from the League of American Bicyclists, and the City of Alexandria is a nationally recognized Bike Friendly Community. The National Landing Site is also very well-served by Capital Bikeshare, the capital region's easy bike rental system with more than 400 stations throughout the DMV. Crystal City was the site of the initial bikeshare stations in Arlington as part of the joint program launch with DC in 2010. The National Landing Site alone has 20 Capital Bikeshare stations.

Planned non-motorized projects in Alexandria and associated with the National Landing Site include extensions to the Potomac Yard, Route One, and Four Mile Run Trails.

Real Estate | Transportation | Tram or Light Rail

F3. Tram or Light Rail: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.

F3.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure tram or light rail service to Site?

F3.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

While Northern Virginia has no tram or light rail service, it has one existing and two planned bus rapid transit (BRT) systems, all of which feature or will feature dedicated lanes and stations, transit signal priority, and off-board fare collection.

Metroway, operated by the Washington Metropolitan Area Transit Authority (WMATA), is the Washington metro region's first BRT line. Metroway operates between Pentagon City Metrorail Station in Arlington and the Braddock Road Metrorail Station in Alexandria, stopping at the Crystal City Metrorail Station along the way. Metroway began service in 2014, and ridership has continued to grow since its inception, from 1,400 riders per weekday in September 2015 to over 2,000 per weekday in December 2017. Ridership is anticipated to continue to grow as future development occurs. Given the dedicated lanes and high-capacity transit stations, it would be relatively easy to expand the carrying capacity of this line. Metroway operates seven days a week, in a mixture of dedicated transit lanes and shared lanes, and includes 13 stations in each direction. During weekday peak periods, it operates every six minutes between North Potomac Yard and Pentagon City, and every 12 minutes between Braddock Road Metro and Pentagon City.

Within Alexandria, Metroway operates in dedicated lanes between Potomac Avenue and East Glebe Road. As development occurs in North Potomac Yard north of East Glebe Road, it is anticipated that Metroway will be realigned to better serve development and to operate in dedicated lanes to connect to existing dedicated lanes in Arlington County, further improving transit reliability. In addition, Metroway will provide improved local access to the future Potomac Yard Metrorail Station, making the National Landing area a true multimodal hub.

Link to Metroway website: http://metrowayva.com/

The National Landing Site is served by Virginia's first BRT service—Metroway—which includes dedicated transit running-way and a high level of passenger amenities.

The facilities are the result of a partnership between Arlington and Alexandria, the Commonwealth of Virginia, Federal Transit Administration, and WMATA. The result is a high-frequency bus service that extends from the Pentagon City Metrorail Station at the north end of the Site, through Crystal City, through Potomac Yard, and connecting to the Braddock Road Metrorail Station to the south. It serves three Metrorail stations, a VRE station, and will serve Alexandria's new infill Potomac Yard Metrorail Station. The service, operated by WMATA, has 6-minute headways during the peak period and 12-minute headways off-peak. This corridor is also targeted to be one of the region's first corridors for implementing off-vehicle fare collection. Since the service's full implementation in spring 2016, ridership continues to grow and is currently at 2,000 passengers per weekday.
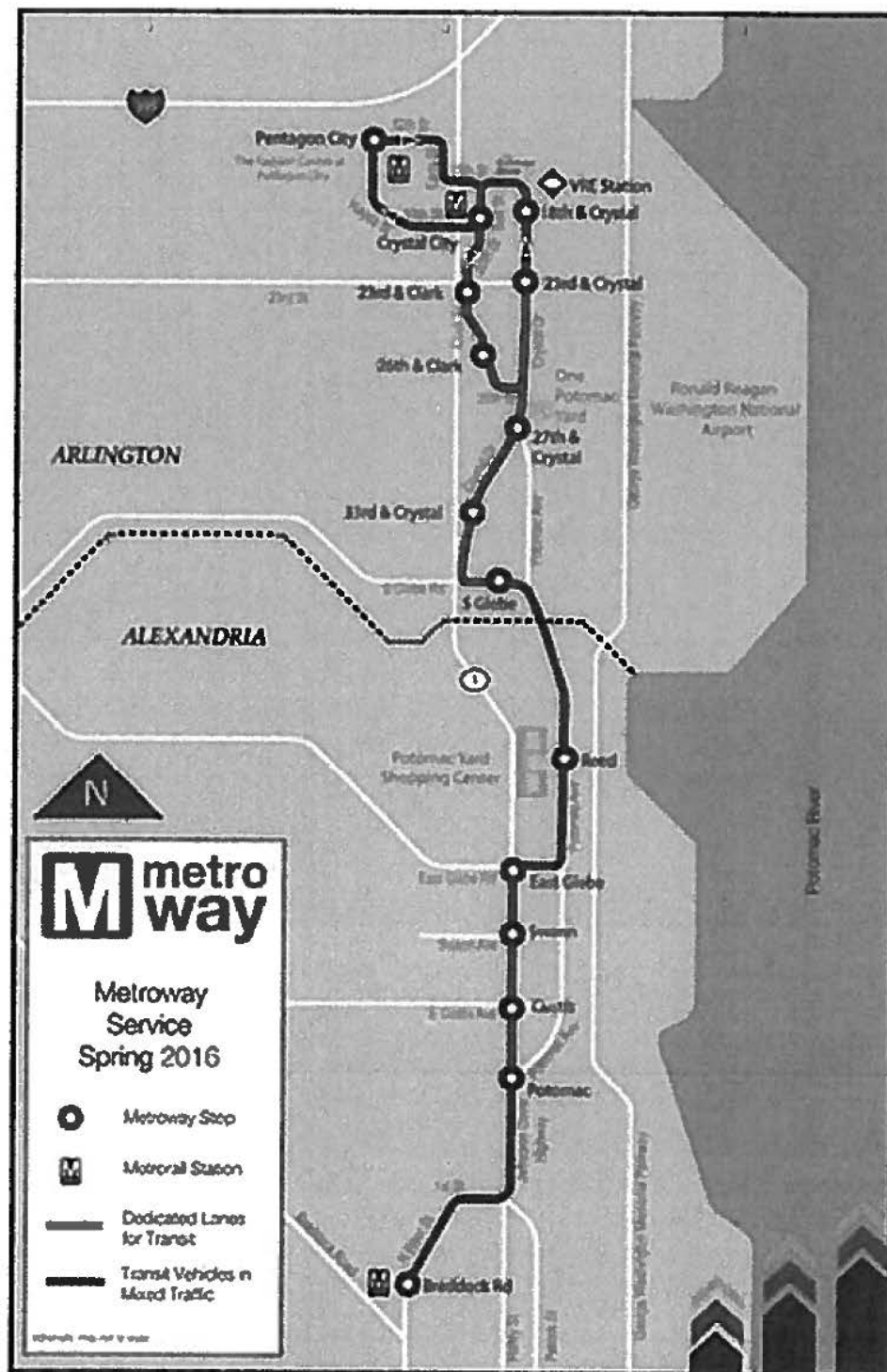
Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure tram or light rail service to Site?
N/A.

Real Estate | Transportation | Metro or Subway

F4. Metro or Subway: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.

F4.a. Extension or new service commitment

F4.a.(I). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure metro service to Site?

F4.a.(II). If Yes, provide letter of commitment and identify funding source(s).

Metrorail, operated by the Washington Metropolitan Area Transit Authority (WMATA), is the backbone of transit service in Northern Virginia with four lines that serve and connect Arlington and Fairfax Counties and the Cities of Alexandria, Fairfax, and Falls Church to Washington, D.C. and Montgomery and Prince George's Counties in Maryland.

New Metrorail stations are being developed as part of an extension to the Metrorail Silver Line, one of which will be directly on the Innovation Station Site in 2020; a second one at Dulles Airport will also open in 2020. A new Metrorail station is opening at Potomac Yard in Alexandria in 2022 and will directly serve National Landing.

Metrorail carries between 600,000 and 700,000 riders per day and historically has the third-highest ridership of urban rail systems in the United States, behind only New York and Chicago. In Fiscal Year 2017, Metrorail provided 90 million rider trips in Northern Virginia.

Metrorail consists of approximately 118 route miles, 91 passenger stations, and a fleet of over 1,100 railcars. Of Metrorail's six lines, four of them - Silver, Orange, Blue, and Yellow - serve Northern Virginia.

Metrorail operates 5:00 a.m. to 11:30 p.m. Monday through Thursday, 5:00 am to 1:00 am on Friday, 7:00 am to 1:00 am on Saturday, and 8:00 am to 11:00 pm on Sunday. During peak periods Metrorail trains arrive on individual lines in Virginia every eight minutes, with double or triple service (every 3-4 minutes) where multiple lines run together on the same track.

During off-peak times, trains arrive on individual lines every 12-20 minutes, with double or triple service on multiple-line segments. Metrorail fares vary by time of day and the distance between stations. The base Metrorail fare is $2.25 and the maximum one-way fare is $6.00. The Metrorail uses regional SmarTrip fare media, which allows seamless transfers between Metrorail and all public bus systems in the region.

National Landing is currently served by the Blue and Yellow Lines at Metrorail stations at Crystal City in Arlington and Braddock Road in Alexandria, with a new station opening in the South District on these lines under construction.

Thanks to Metrorail's fully exclusive right-of-way, Metrorail trains generally enjoy speed and reliability that is significantly better than most surface transit systems such as light rail or bus rapid transit.

Although a maintenance backlog negatively affected reliability in recent years, WMATA's recent "SafeTrack" and "Back2Good" initiatives, coupled with delivery of nearly 500 new railcars, have considerably improved reliability since 2016.

Between 2008 and 2015, Metrorail had 20 "major vehicle failures" (failures preventing vehicle movement) per million vehicle revenue miles and 1.7 "other vehicle failures" per million vehicle revenue miles—the sixth and third lowest rates, respectively, among major metro/subway systems (Source: Washington Post 2016). From October to December 2017, Metrorail system-wide on-time performance was 87%.

During the time period covering July 2017 to December 2017, on-time performance by Metrorail line in Virginia was 88% on the Blue Line, 89% on the Orange Line, 89% on the Silver Lines, and 93% on the Yellow Line. In addition to high on-time performance, rail fleet reliability (i.e., rail mean distance between delays) has increased by 25% over the last six months (ending December 2017) from 69,466 miles to 87,225 miles (source: WMATA Vital Signs Report for October-December 2017).

To bolster rail customer service satisfaction, WMATA recently introduced its "Rush Hour Promise" that automatically refunds fares to customers if a rush hour trip on Metro is delayed by 15 minutes or more.

More information about the Metrorail service is available through the links below.
- Rail service guide: https://www.wmata.com/service/rail/

- New rider guide:https://www.wmata.com/rider-guide/new-riders/upload/pocket-guide-English.pdf

- "Back2Good" operations improvement initiative: https://www.wmata.com/back2good

- "SafeTrack" 2016-2017 track upgrade initiative: https://www.wmata.com/service/SafeTrack.cfm

SafeTrack was an accelerated track work plan that ran from June 2016 to June 2017 to address safety recommendations and rehabilitate the Metrorail system to improve safety and reliability. Through SafeTrack, Metro completed approximately three years' worth of maintenance and rehabilitation work in approximately one year. The plan significantly expanded maintenance time on weeknights, weekends, and midday hours and included 16 "Safety Surges"—long duration track outages for major projects in key parts of the system.

With the conclusion of the SafeTrack emergency maintenance program in June 2017, Metro customers have experienced improvements in service reliability. In December 2017, 88% of trips (13.6 million trips) arrived on time based on actual customer "tap in/tap out" travel time data. Metro credits the accelerated delivery of the new and popular 7,000-series railcars—combined with the retirement of all 1000- and 4000-series railcars months ahead of schedule, fewer track delays, improved railcar maintenance, and recent schedule adjustments—with helping to keep customers on time. Each month, another 20+ new 7,000-series railcars arrive, with 50 of the new 7,000-series trains (400 railcars) now in service and 100% of the new 7,000 series cars expected to be delivered by the end of FY 2018.

Metro's turnaround has been driven by the largest-ever annual capital investment in the system.

The record setting $1.16 billion in capital funding spent in FY 2017, including $700 million in federal grant reimbursements, led to improved track infrastructure, railcar reliability, and escalator performance. Efforts to provide an additional $500 million per year are advancing in Virginia, Maryland, and Washington, D.C.

Planned Improvements in Virginia:

- **Crystal City Metrorail Station Second Entrance:** In the Central District, a second full entrance to the Crystal City Metrorail Station is planned for Crystal Drive to increase station capacity, improve intermodal connections, and better serve Crystal City workers and residents. This project is finishing the conceptual engineering phase.

- **Potomac Yard Metrorail Station:** In the South District, building a new Metrorail station is central to the vision for the redevelopment of Potomac Yard as a smart-growth, walkable, mixed-use community with access to high-quality retail, entertainment, and parks. The City of Alexandria is working with WMATA to construct a new infill Metrorail Station at Potomac Yard on the Blue and Yellow Lines that will open in 2022. The new Metrorail station will help to accommodate the growing transportation demand in the Route 1 corridor. The Metrorail station in Potomac Yard will provide benefits to the community and region by:
  o Maximizing the number of people taking transit to and from the Potomac Yard area by providing direct access to Metrorail;
  o Removing thousands of cars from the Route 1 corridor every day;
  o Enabling a mix of uses in an environment where people can walk or bike to destinations in Potomac Yard for their daily needs;
  o Providing a vibrant destination for all Alexandrians with a mix of uses, including significant shopping and public parks;
  o Strengthening and diversifying the tax base to improve the long-term economic stability of the City.

The City has approximately **$286,000,000** in its 10-year Capital Improvement Program to construct the Potomac Yard Metrorail station.

The National Landing Site is served by Metrorail's Blue and Yellow Lines, providing access to many locations in Virginia, D.C. and Maryland.

These lines split north of the Pentagon with the Blue Line connecting with Rosslyn before crossing into the District, while the Yellow Line crosses the Potomac River and serves L'Enfant Station. To the south, the two lines split at King Street with the Blue Line extending to Franconia-Springfield and the Yellow Line terminating at Huntington. Each line operates at eight-minute peak period frequencies and 12-minutes off-peak. The combined frequency to the site is four-minute headways in each direction during peak periods and six minutes off-peak.

The Site is directly served by two Metrorail stations, Pentagon City and Crystal City, one planned and funded infill station in Alexandria's portion of Potomac Yard, and three additional stations just beyond the site: Pentagon, Reagan National Airport, and Braddock Road. Many of these stations experience high ridership, with Pentagon City and Crystal City both at over 20,000 passengers per weekday. Transit Scores around the existing Pentagon City and Crystal City stations are in the "Excellent Transit" category with scores from 71 to 76. According to the Environmental Protection Agency's Access to Jobs and Workers Via Transit tool, between 20% and 24% of the region's workforce can reach the blocks around the Crystal City and Pentagon City Metrorail stations within 45 minutes by transit.

Arlington and Alexandria are making sizable investments to Metrorail stations. Arlington is adding a new elevator and opening a pedestrian access tunnel at Pentagon City Metrorail Station. In Crystal City, Arlington is working to advance a second Metrorail station entrance on Crystal Drive to improve capacity and linkage to other transit. This project is valued at $90 million.

Extension or new service commitment:
☒ Yes

The new infill metro station, second Metrorail station entrance and improvements to capacity and linkage to other transit will be funded through a combination of local and state dollars (explained in the incentive portion later in this section). The projects are currently identified in public Capital Improvement Plan (CIP) documents and will be expedited and enhanced if this site is chosen for HQ2.

F5. Commuter Train Service: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F5.a. Extension or new service commitment
F5.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure rail service to Site?
F5.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Commuter rail helps to connect residents living beyond the reach of Metrorail in Northern Virginia to jobs closer to the center of the region.

In Northern Virginia, commuter train service is provided by the Virginia Railway Express (VRE), which connects Manassas and Fredericksburg to Union Station via Alexandria and Arlington, as well as Amtrak, which is headquartered at Union Station in Washington, DC.

VRE provides commuter rail service in Northern Virginia on its Fredericksburg and Manassas lines for over 19,000 passengers per day, providing five million trips in Northern Virginia in Fiscal Year 2017. 32 daily commuter trains operate through Northern Virginia, connecting Fredericksburg and Manassas to Arlington, Alexandria, and to Washington D.C.'s Union Station, with plans to increase service with additional trains in development. Both VRE rail lines provide peak period commuter service to/from Union Station in Washington, D.C. Both the Fredericksburg and Manassas lines also serve L'Enfant Plaza in Washington, D.C., Crystal City Metrorail Station in Arlington, and King Street Station in Alexandria, which are all transfer points from VRE to the Metrorail system. In October 2017, VRE recorded a system-wide on-time performance of 90%. In January 2018, VRE's on-time performance was 90.12% on its Fredericksburg Line and 90.18% on its Manassas Line. Customers can track VRE's daily on-time performance on its website at: https://www.vre.org/service/daily-performance/.
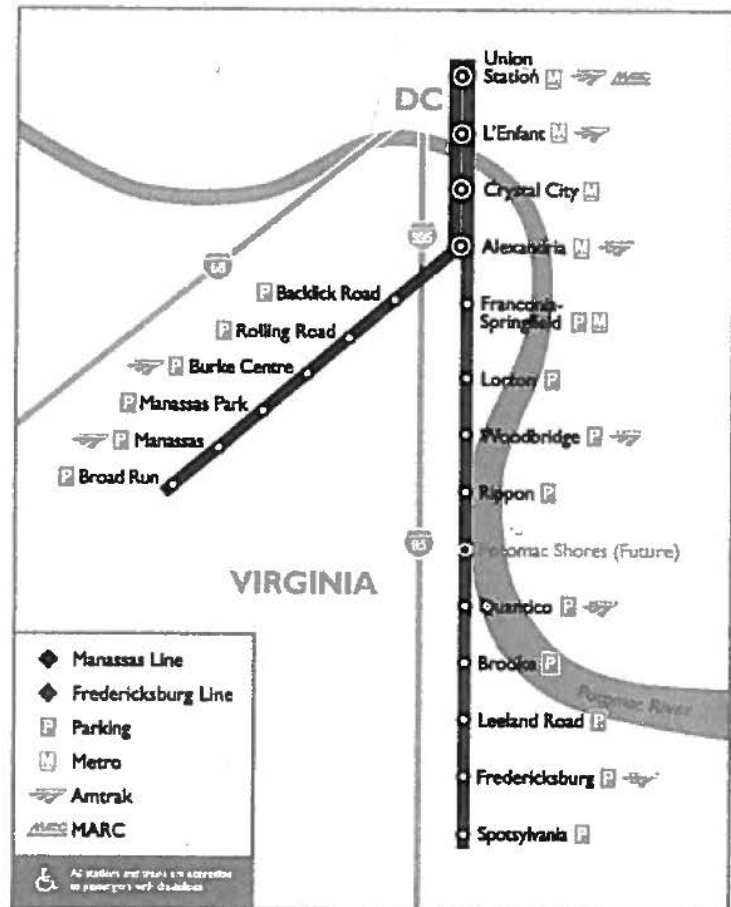
More information on VRE is available through the following link, and a map of the system is included below.

VRE system details: https://www.vre.org/

The VRE Operations Board adopted the VRE System Plan in 2014. The plan provides a framework for VRE System investments and actions VRE should pursue through 2040 to best meet regional travel needs. The system investments and service expansion recommended in the System Plan will enable VRE to carry over 40,000 new weekday trips by 2040, more than double the 19,000 daily trips carried today.

The System Plan investments are grouped into three phases between now and 2040:

- Phase 1, 2015-2020: Recommends pursuing relatively low-cost investments in equipment, stations, and yard storage to maximize the capacity and service currently allowed in VRE's current agreements with the CSX and NS railroads. These projects are included in VRE's FY2015-2020 Capital Improvement Program (CIP) and will expand system capacity to carry up to 25,000 riders per day.

- Phase 2, 2021-2030: Focuses on expanding VRE peak period service and introducing new services, including reverse peak trains and more express trains. Major railroad investments to relieve the key capacity bottlenecks on the VRE system, including the Long Bridge crossing of the Potomac River, are identified in this phase to support the expanded VRE service. With increased Long Bridge corridor capacity, the full ridership potential of expanded service can be realized.

- Phase 3, 2031-2040: Contains capital projects to enable continued growth in VRE service and ridership, including completing the triple tracking of the CSX main line between Alexandria and Spotsylvania, as well as additional peak and mid-day service. The system investments included in the Plan also create the opportunity for weekend service.
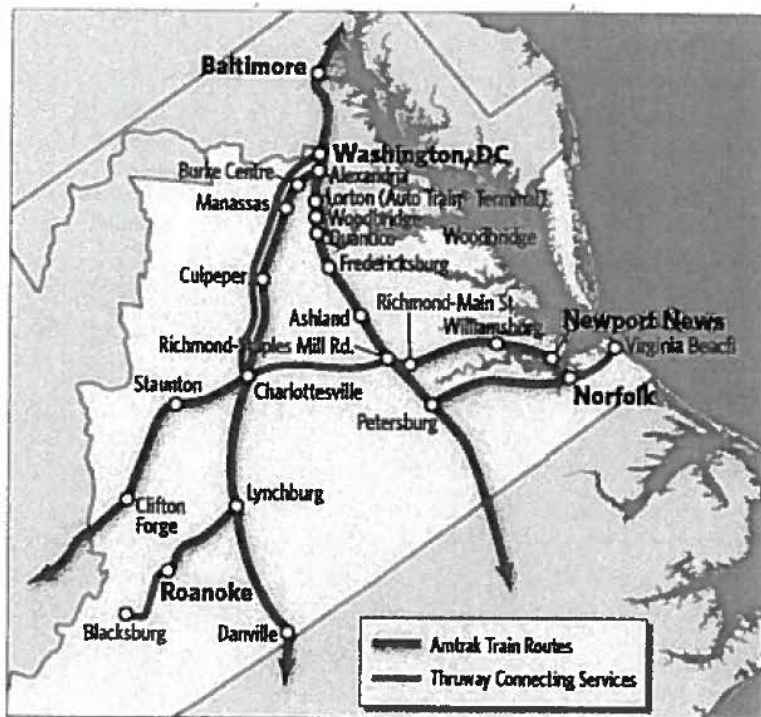
VRE System Plan 2040 Final Report:
https://www.vre.org/vre/assets/File/2040%20Sys%20Plan%20VRE%20finaltech%20memo%20combined.pdf

In addition to VRE, Amtrak service along its Northeast Corridor makes stops in Alexandria (VA), Union Station (D.C.) and New Carrollton (MD).

Amtrak passengers can transfer to the WMATA Metrorail system at all three of these Amtrak stations. Amtrak service is also available to/from the Northern Virginia communities of Burke Centre, Lorton, Manassas, Quantico, and Woodbridge. Lorton also hosts an Amtrak "Auto Train" station, where people can load their cars onto a train for transport to Florida. The Alexandria Station in Old Town serves as the largest Amtrak station in Northern Virginia, with more than 40 Amtrak trains per day and same-station transfers to both Metrorail and VRE. Within Northern Virginia, Amtrak trains effectively serve as both intercity transit and supplemental commuter rail service. The Amtrak lines also connect Charlottesville, Lynchburg, and Roanoke, VA, Atlanta, GA, New Orleans, LA, and multiple destinations in Florida to the south, Martinsburg, WV, Pittsburgh, PA, Cleveland, OH, and Chicago, IL to the west, and Baltimore, MD, Philadelphia, PA, New York City, NY and Boston, MA to the north, among others.

More information on Amtrak service in Virginia is available through the following link: https://www.amtrak.com/virginia

The Virginia Department of Rail and Public Transportation (DRPT) is also studying the implementation of high-speed passenger rail service between Washington, D.C., and Richmond, Virginia (DC2RVA). DRPT is currently working on a Final Environmental Impact Statement, preliminary engineering, and a service development plan for the project.

The National Landing area is served by VRE at the Crystal City (Arlington) VRE station, located on the east side of Crystal Drive at 15th Street.

The Crystal City VRE station can be accessed from North Potomac Yard by Potomac Avenue / Crystal Drive, the Metroway bus rapid transit system, Metrorail, ART bus, and regional trails.

The VRE Crystal City station is one of the busiest in the system and is the destination for about 18% of VRE riders. VRE is in the process of planning a new, relocated Crystal City station to improve accessibility and accommodate greater train capacity, as well as improve the safety and reliability of the railroad. The VRE station is within proximity to both the Crystal City Metrorail Station and the Metroway bus rapid transit, which provides connectivity between Pentagon City, Potomac Yard, and Old Town Alexandria.

In addition to VRE's work, the state is advancing an expansion of the rail corridor as part of the Atlantic Gateway Project and High-Speed Rail, with plans to increase track capacity from three tracks to four in this area (see http://dc2rvarail.com/). The Federal Railroad Administration and the District of Columbia are also studying options for increasing passenger rail capacity across the Potomac River through the Long Bridge Study.

Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure rail service to Site?
VRE is in the process of planning a new, relocated Crystal City station to improve accessibility and accommodate greater train capacity, as well as improve the safety and reliability of the railroad. The VRE station is within proximity to both the Crystal City Metrorail Station and the Metroway bus rapid transit, which provides connectivity between Pentagon City, Potomac Yard and Old Town Alexandria.

In addition to VRE's work, the state is advancing an expansion of the rail corridor as part of the Atlantic Gateway Project and High Speed Rail, with plans to increase track capacity from 3 tracks to 4 in this area (see http://dc2rvarail.com/). The Federal Railroad Administration and the District of Columbia are also studying options for increasing passenger rail capacity across the Potomac River through the Long Bridge Study.

F6. Ferry Service for employee commuting: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F6.a. Extension or new service commitment
F6.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure ferry service to Site?
F6.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

The Potomac River Boat Company operates a tourism-oriented ferry service that provides water transportation between Maryland (National Harbor), Alexandria (Old Town), and D.C. (The Wharf and Georgetown).

The company recently acquired four new ferries to carry 149 passengers each between the sites mentioned. In an attempt to provide more non-SOV travel options for people commuting to Northern Virginia and D.C., the Northern Virginia Regional Commission (NVRC) has conducted studies of the viability of increasing ferry service along the Potomac River in the future. Plans are also under development to add ferry/water taxi service to Ronald Reagan National Airport, providing millions of airline passengers an alternative mode of transportation to reach destinations along the D.C., Virginia, and Maryland waterfronts.

Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure ferry service to Site?
N/A
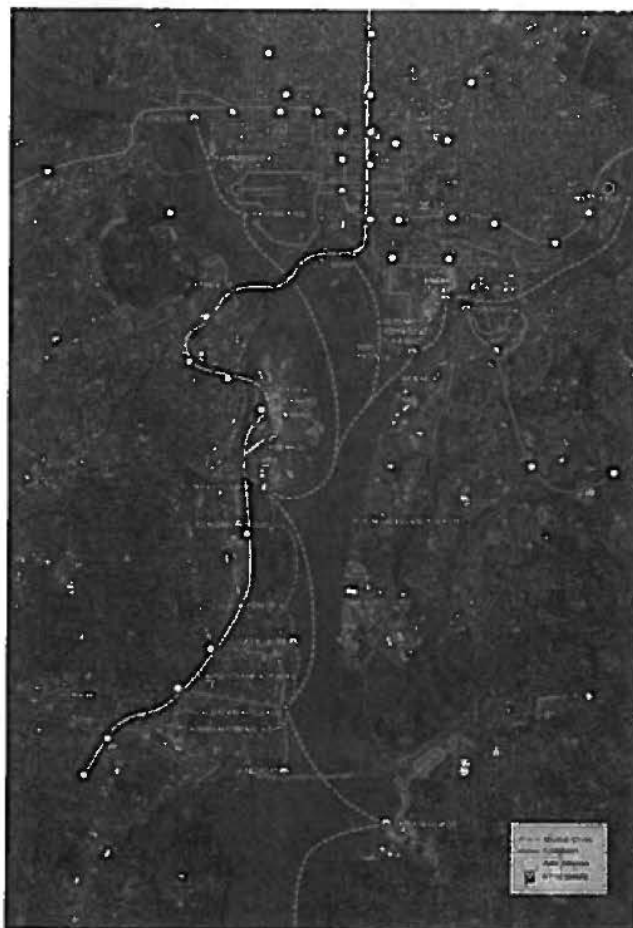
WATER TRANSPORTATION FRAMEWORK PLAN
POTOMAC/ANACOSTIA RIVERS

TOURISM ROUTES AND LANDINGS
Feb 22, 2018

F7. Bus Service: name of provider, details of system (maps) of areas served, and planned improvements. Also include data on the reliability of the service and delays.
F7.a. New service or extension commitment
F7.a.(i). Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure bus service to Site, if necessary?
F7.a.(ii). If Yes, provide letter of commitment and identify funding source(s).

Over 200 bus routes serve Northern Virginia specifically.

At the regional level, Metrobus, operated by the Washington Metropolitan Area Transit Authority (WMATA), connects many locations across Northern Virginia to Washington, D.C., and parts of Maryland, with 73 routes in Virginia alone. Many of Northern Virginia's cities and counties operate their own local bus systems as well, with DASH serving 11 routes in Alexandria, Arlington Transit (ART) serving 17 routes in Arlington County, Fairfax Connector serving 88 routes in Fairfax County, and Loudoun County Transit serving 35 routes in Loudoun County. Loudoun and Prince William Counties also operate extensive peak hour, long-haul commuter bus services with connections to regional employment centers as well as to Metrorail and VRE. All candidate sites are currently served by bus service, which would be significantly increased if selected.

The region offers express bus service between key destinations (such as between Dulles Airport, Rosslyn, and downtown D.C.) and bus rapid transit (BRT) with dedicated bus lanes connecting Arlington and Alexandria. With all of these services using the common SmarTrip fare media, transfers are easy. Together, these bus services provided nearly 40 million rider trips in Northern Virginia in FY17 (July 2016 – June 2017).

Metrobus system-wide, on-time performance (meaning the percentage of customer journeys completed on time) was 78% during the calendar quarter that ended on December 31, 2017. During the same period, Metrobus customer satisfaction was 76%.

WMATA Metrobus Map, including all regional providers (Virginia):
https://www.wmata.com/schedules/maps/upload/VA-System-Map-Web-version.pdf

- WMATA Metrobus – regional bus service: https://www.wmata.com/service/bus/
- Arlington Transit (ART) – local bus service: http://www.arlingtontransit.com/
- Alexandria (DASH) – local bus service: https://www.dashbus.com/welcome
- Fairfax (County) Connector – local bus service: http://www.fairfaxcounty.gov/connector/
- Fairfax (City) CUE – local bus service: http://www.fairfaxva.gov/government/public-works/transportation-division/cue-bus
- Loudoun (County) Transit – commuter bus service: https://www.loudoun.gov/bus
- PRTC - local (OmniLink) and commuter bus service (OmniRide): http://www.prtctransit.org/index.html

The National Landing Site (Pentagon City/Crystal City/Potomac Yard) has extensive bus service, including regional, local, commuter, and intercity buses.

Both the Pentagon City and Crystal City Metrorail stations serve as major bus-to-bus and bus-to-rail transfer locations. The Metroway BRT service is described in a previous section. Here we describe other regional and local bus services.

In addition to the Metroway BRT, there are 13 regional Metrobus routes that serve Metro stations in the National Landing area and connect the Site with the Pentagon, dense residential and commercial areas on Columbia Pike, and points south in Alexandria:
- 10 series (10A & 10E) – Alexandria to Pentagon
- 23 series (23A & 23B) – McLean to Crystal City
- 16 series (16A, B, E, G, H, J, K, P, X) - Columbia Pike

The Columbia Pike corridor routes are among the highest-frequency and highest-ridership routes in Virginia and the Washington region, with buses every five minutes or less during peak times.

Local ART bus service at National Landing includes six routes:
- 42 – Pentagon to Ballston
- 43 – Crystal City to Court House express
- 74 – Pentagon City to Columbia Pike
- 84 – Pentagon City to Douglas Park via I-395
- 87 – Pentagon City to Shirlington via I-395
- 92 – Pentagon to Crystal City via Long Bridge Park

The ART 43 is a notable express bus that connects the Crystal City Metrorail Station with the VRE Station in Crystal City, to Rosslyn Metrorail Station, and finally to the Court House Metrorail Station before returning.

Alexandria's DASH bus service operates two local routes that serve the Alexandria portion of National Landing:
- AT9 – Mark Center to Potomac Yard shopping center
- AT10 – King St-Old Town Metro station to Potomac Yard shopping center

Loudoun County Transit and PRTC Omniride (Prince William County) each provide two commuter bus routes that serve Crystal City on weekdays.

Pentagon City also has intercity bus service on South Hayes Street adjacent to the Pentagon City Metrorail Station.

To assist workers, residents, and visitors with the extensive transit options in Crystal City, Arlington operates a Commuter Store in close proximity to the Crystal City Metrorail Station entrance and on one of the primary walking routes to VRE. This facility provides access to all of the region's transit information (maps and schedules), trip planning services, and direct transit fare media sales. Arlington is currently involved in the build-out of a new Commuter Store to serve the Pentagon City Metrorail Station.

Prior to the opening of the future Potomac Yard Metrorail Station, anticipated by 2022, Alexandria, DASH, and WMATA will plan for improving bus route connectivity to the new station and adjusting route alignments as needed to provide the best bus transit access possible to the new rail facility.
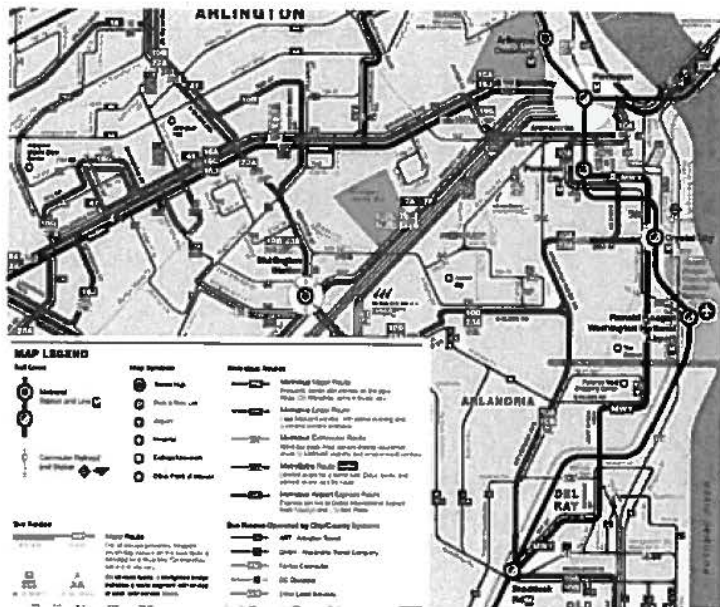
Will State/Commonwealth/Province or local government(s) commit to acquire right-of-way to assure bus service to Site, if necessary?
N/A.

Real Estate | Transportation | Transit

F8. Master Transit Plan: please provide a copy of the Master Transit Plan encompassing Site, if any.

Planned transportation improvements for the National Landing Site are described in planning documents from Arlington County and the City of Alexandria.

These are (with associated dates of adoption or amendment and links):

1. Arlington County Master Transportation Plan, Goals and Policies Element (Updated February 2017): https://goo.gl/uCVjub

2. Arlington Master Transportation Plan, Map (Updated February 2016): https://goo.gl/4VJuYU

3. Alexandria Transportation Master Plan (2008 to present): https://www.alexandriava.gov/uploadedfiles/tes/info/tes_tmp_complete.pdf

4. Arlington Master Transportation Plan, Transit Element (Updated December 2016): https://goo.gl/ciMjt9

5. Arlington Master Transportation Plan, Bike Element Update Website (In progress): https://goo.gl/4LTxqZ

6. Alexandria Vision Zero Action Plan (2017): https://www.alexandriava.gov/uploadedFiles/tes/info/Vision%20Zero%20Action%20Plan%20Final_12012017.pdf

7. Alexandria Transportation Master Plan, Pedestrian and Bicycle Chapters (2016): https://www.alexandriava.gov/uploadedFiles/tes/info/2016-0627_Ped%20and%20Bike%20Master%20Plan%20WEB2.pdf

The Alexandria Pedestrian and Bicycle Chapters were updated and approved in 2016.

The plan is currently undergoing updates for the rest of the chapters. This update will highlight crucial technology upgrades that the City will need to address to further the ongoing work toward becoming a Smart City. As part of this plan update, Alexandria is embarking on a Transit Vision Study in early 2018 that will identify existing bus transit needs in Alexandria, as well as future projected needs and untapped markets, and develop an unconstrained, and non-biased future bus transit network / alignment that responds to current and projected needs. Similar efforts have been conducted in cities such as Houston, Jacksonville, and San Jose, where plans were done to adapt the transit system to reality in terms of existing and future demographics and land use.

Two small-area plans also describe transportation and land-use development plans for the National Landing Site:

1. Arlington Crystal City Sector Plan (Adopted in 2010): https://goo.gl/APSAAS

2. Alexandria North Potomac Yard Small Area Plan (2017): https://www.alexandriava.gov/uploadedFiles/planning/info/masterplan/City_Master_Plan_Map/NorthPotomacYardSAPCurrent.pdf

Real Estate | Local Taxes | Real Property Tax Rate
G1.a. Calculate Annual Real Property Taxes for Site
G2.a. Detail any personal property exclusions

In the North and Central Districts, the real property tax rate is $1.006 per $100 of assessed value.

This includes the base rate of $0.993 and the County-wide sanitary district rate of $0.013 for stormwater management.

In addition, commercially zoned properties in Arlington are also subject to the Transportation Capital Fund at $0.125, and the Crystal City business improvement service district tax (Central District) rate is $0.043 for a total real property tax rate of $1.174 per $100 of assessed value.

In the South District the real property tax base rate is $1.13 per $100 of assessed value.

This area is part of the Tier I Special Services District, where an additional tax of $0.20 per $100 is levied to help finance the new Metro station and related improvements, for a total real property tax rate of $1.33 per $100 of assessed value. As part of the Amazon proposal, a 30% real estate tax abatement on new commercial buildings over the course of 15 years is being offered.

At the tax rate above and current assessed values, real property taxes for the buildings under consideration for the first phase of occupancy are approximately $2.60 per square foot.

Assuming assessed values will increase due to building improvements and occupancy, using a per square foot rate of $3.75, annual real property taxes for 500,000 occupied square feet in the first phase would be approximately $1,875,000.

The City and County assess all business personal property, except computers, at 80% of the property's purchase cost in its first year of service.

In each subsequent year of service, the assessed value declines by 10% until it reaches the minimum value of 20% of purchase cost in the seventh and later years of service. Both jurisdictions assess computers at 65% of the property purchase cost in the first year of service, 45% the second year, 30% the third year, 20% the fourth year, and five % in the remaining years. The rate in the North and Central Districts is $5.00 per $100 of assessed valuation and $4.75 per $100 of assessed valuation in the South District.

Potential exclusions from business tangible personal property tax include: application software and inventory for resale are exempt some property of manufacturers may be exempt, and property of a few categories of nonprofit organizations may be exempt and must consult with the Commissioner of Revenue office for more information

.

G3. Detail any additional local taxes (i.e., overlay, infrastructure)

As described above, in the North and Central Districts, Crystal City business improvement service district tax rate is $0.043 for each $100 of real estate assessed value. This tax is imposed to fund additional services in the downtown Crystal City area (Central District). This service district tax rate is in addition to the real estate tax rate.

In the South District, an additional tax of $0.20 per $100 of assessed value is levied to help finance the new Metro station and related improvements.

The following business taxes are also levied at the local level:

- Business License Tax ($0.05 to $0.58 per $100 of assessed value depending on the type of business): all persons (including corporations, partnerships, and individuals) doing business in Alexandria and Arlington, or self-employed professionals on a part-time or full-time basis who have annual gross receipts in excess of $10,000, are required to pay an annual tax on gross receipts earned in the jurisdictions.

- Sales Tax: 1% on retail sales: this tax is in addition to the state's sales tax rates.

- Meals Tax: 4% of the total amount charged for the meal, including alcoholic beverages.

In addition to taxes described above, the City and County also tax cigarettes, hotel and motel rooms, utilities, and admissions.

Real Estate | Government
H1.a. Municipal government organization and responsibilities
H1.b. County government organization and responsibilities
H1.c. State government organization and responsibilities, especially as government action may affect the Company and the headquarters.

Arlington County and the City of Alexandria have a long history of working together as partner jurisdictions on issues ranging from transportation and workforce development to parks and open space planning.

As the two Virginia localities that, together with Washington, D.C., make up the urban core of the region, our communities will work seamlessly to welcome Amazon to National Landing.

Arlington County is a full-service, consolidated county government with a Triple-A bond rating consisting of more than 3,500 full-time employees with a $749M General Fund budget (FY 2018) for County operations.

The County Manager is the principle administrative officer and serves as the Chief Executive Officer (CEO) appointed by the Arlington County Board. Arlington County operates under the "County Manager Plan" form of government. Under this structure, the County Manager is responsible for carrying out the vision and policies set by the County Board and providing oversight for the day-to-day operations and management of a broad range of County programs and services.

Alexandria is an Independent City (Virginia cities have no county affiliation), which derives its governing authority from a charter granted by the Virginia General Assembly.

The present City Charter was granted in 1950; it was amended extensively in 1968, 1971, 1976, and 1982. Alexandria operates in the council-manager form of city government. This form of government centralizes legislative authority and responsibility in the elected City Council. Administrative authority and responsibility are held by the City Manager, who is appointed by the City Council. Since 1992, the City has maintained the highest grades (AAA) from both major bond rating agencies.

Arlington County organization and responsibilities:
The five-member County Board is Arlington's local governing body for general County government and is vested with its legislative powers. Elected at-large, Board members serve staggered four-year terms with no term limits, which include an annually rotating Chair, who is the official elected County head and presides over Board meetings, and a Vice Chair, both of whom are selected by their colleagues on the Board at the annual Organizational Meeting held in early January. The Chair and Vice Chair have the same powers and duties as other Board members — a vote but no veto power. Under the County Manager Plan form of government, the County Board appoints four positions which report directly to the Board, including the Clerk of the Board, County Attorney, County Auditor, and County Manager.

The County Board makes policy decisions that the County Manager administers (e.g., public safety, trash collection, parks and recreation, libraries, etc.); makes land-use and zoning decisions within the authority granted by the Code of Virginia; sets the real estate, personal property, and other tax rates; adopts the annual operating budget and bi-annual capital improvement plan; appoints community members to citizen advisory groups; and represents Arlington County on numerous regional, statewide, and national advisory groups and commissions, including:
- Metropolitan Washington Council of Governments
- Washington Metropolitan Area Transit Authority, Northern Virginia Transportation Commission
- Northern Virginia Regional Commission
- Virginia Association of Counties
- National Association of Regional Councils

For more information, see the organizational chart of Arlington County government.
https://arlingtonva.s3.dualstack.us-east-1.amazonaws.com/wp-content/uploads/sites/6/2015/11/arlington_county_org_chart.pdf

City of Alexandria organization and responsibilities:
The Alexandria City Council is composed of a Mayor and six Council members who are elected at-large for three-year terms. The Mayor, who is chosen on a separate ballot, presides over meetings of the Council and serves as the ceremonial head of government. The Mayor does not have the power to veto Council action. Council members traditionally choose the person receiving the most votes in the election to serve as Vice Mayor.

Council determines the needs to be addressed and the degree of service to be provided by the administrative branch of the City government. Examples of the powers granted to the Council under Alexandria's Charter include:

- Determine policy in the fields of planning, traffic, law and order, public works, finance, social services, and recreation; establish administrative departments, offices, and agencies

- Appoint and remove the City Manager

- Adopt the budget, levy taxes, collect revenues, and make appropriations; authorize the issuance of bonds by a bond ordinance

- Appoint members of the Planning Commission, and other City authorities, boards, commissions, and committees

- Inquire into the conduct of any office, department, or agency of the City and make investigations into municipal affairs and provide for an independent audit

The City Manager is appointed by City Council, and serves as the Chief Executive Officer of the City. The Manager provides expert guidance to the Council and is responsible for planning, organizing, directing, and coordinating all activities of City government. The manager prepares and submits the annual operating budget and capital improvement program and is responsible for their administration after adoption; prepares monthly and annual fiscal and activity reports; and appoints all City department heads and employees, except court and school personnel.

The Virginia General Assembly is the state's legislative body.
The General Assembly's lower house, the Virginia House of Delegates, consists of 100 members who are elected to two-year terms; its upper house, the Senate of Virginia, consists of 40 members with four-year terms. The Governor of the Commonwealth of Virginia is the state's chief executive, who serves a four-year term and cannot serve consecutive terms. The Governor oversees the state's executive agencies. Ralph Northam is the current Governor; he began his term in January 2018.

The Virginia Economic Development Partnership (VEDP) leads business recruitment, expansion assistance, and trade development activities at the state level, in close coordination with regional and local economic development efforts. VEDP is a quasi-independent state economic development authority governed by a 17-member board of directors that spans gubernatorial administrations. (The board of directors is comprised of Virginia businesspersons appointed by the Governor and the General Assembly.) This governance structure enables VEDP to function as a nonpartisan EDO with stable leadership, operating nimbly and creatively to encourage the expansion and diversification of the state's economy. The authority also administers many of the state's incentive programs.

 In addition, Virginia has created the Major Employment and Investment Project Approval Commission (MEI Commission), vested with the authority to confidentially review and approve custom grant proposals for significant economic development projects during the site selection process. The MEI Commission is comprised of leaders from the General Assembly and executive agencies (e.g., the chairs of the House Appropriations Committee and Senate Finance Committee, as well as the Secretaries of Finance and Commerce and Trade). By considering proposed incentive packages in closed session, the MEI Commission can give prospects certainty about Virginia's incentive offering while avoiding premature public disclosure.

Elected Officials: County Executives

The Arlington County Board consists of five members who serve four-year terms with no term limits. The current Board members are Katie Cristol, Chair, Christian Dorsey, Vice Chair, Erik Gutshall, Libby Garvey, and John Vihstadt.

Elected Officials: Mayor or Chief Executive Officer

In Arlington, the County Manager, Mark Schwartz, serves as the Chief Executive Officer appointed by the elected Arlington County Board. In Alexandria, Mark B. Jinks, the City Manager, is appointed by Mayor Allison Silberberg and the City Council, consisting of Vice Mayor Justin Wilson, and Councilmembers Willie Bailey, John Taylor Chapman, Tim Lovain, Del Pepper, and Paul Smedberg.

Elected Officials: Municipal Legislative Officers, Representatives

In Arlington, there are also five elected constitutional officers which include the Clerk of the Circuit Court, Treasurer, Commissioner of Revenue, Commonwealth's Attorney, and Sheriff.

Alexandria's other elected representatives include the Clerk of Circuit Court, Commonwealth's Attorney, Sheriff, and the Alexandria School Board. Descriptions of those offices include:

- The **Clerk of the Circuit Court** is elected for an eight-year term and serves as the chief administrative officer of court operations. The Clerk is responsible for managing and keeping records of court proceedings; collecting fines; recording and keeping land records and transfer of land ownership records, such as deeds and mortgages; the custody of subdivision plats and land tract maps; the sale of marriage licenses; and administering oaths and keeping disclosure statements.

- The **Arlington Treasurer** is elected for a four-year term and is responsible for the collection, custody, and disbursement of County funds. The Commissioner of Revenue is elected for a four-year term and is charged with assessing local taxes, including the preparation of the real estate and personal property tax books and tax bills.

- The **Commonwealth's Attorney** is elected for a four-year term and is the state's attorney for the prosecution of local criminal offenses.

- The **Sheriff** is elected for a four-year term and is responsible for the protection of the lives and property of County residents. The Sheriff serves all warrants of arrest and summonses for witnesses and jurors, acts as bailiff at sessions of the Circuit and District Court, and supervises the County detention facility and its inmates.

- The **Alexandria School Board** is a nine-member elected body that adopts policy for the daily operation of schools and sees that school laws are properly explained, enforced and observed.

I1. Describe any unique talent in the immediate area or opportunities that may not be covered in the Talent section.

Young. Smart. Progressive.

There's no mystery why independent studies consistently rank Arlington County and the City of Alexandria as a top location for labor and talent. Niche placed Arlington first and Alexandria fourth as the Best Cities in the U.S. for Millennials. In Arlington, 36% of the population is comprised of those ages 25 to 39. It is 33% in Alexandria. These are among the highest percentages of any city or county in the nation.

Arlington is a perennial contender as the most educated County in the country. More than 74% of residents 25 years and older have a bachelor's degree or higher, a nearly four percent increase over the last five years. Most of this growth can be attributed to the increase in residents with graduate or professional degrees—more than 40% have been conferred masters or higher degrees. In Alexandria, 63% of residents 25 years and older have a bachelor's degree or higher, a jump of five % the past five years. Nearly 34% have a graduate or professional degree.

The population isn't just young and highly educated. It's also diverse and inclusive. More than a quarter of the area's families speak a language other than English at home. Movoto highlighted Arlington and Alexandria as best towns for LGBTQ families. Practices including non-discrimination laws, electing local LGBTQ leaders, and providing inclusive health benefits for County and City employers were contributors to the top rankings. Advocate magazine recently included Arlington among the top 10 Gayest Cities in America. What's more, the Human Rights Campaign Fund recently named Arlington and Alexandria two of 37 American "All-Star Cities" acclaimed for high standards of inclusiveness and protections toward LGBTQ communities. Arlington scored 87 out of 100 in the Human Rights Campaign's Municipal Quality Index—the highest of any community in Virginia.